



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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EcoChem Project: C28601-1

SDG: 22G0097

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Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0097 | SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SE | ✓ | ✓ | ✓ |
| 22G0097 | FD-01-07/06/2022 | 22G0097-49 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SE | ✓ | ✓ | ✓ |

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0097 | SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SE | ✓ | ✓ | ✓ |
| 22G0097 | SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HydroGeologics -Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0097 | 36 Sediment | Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

The case narrative indicated that several samples were analyzed at dilutions due to internal standard outliers; however, the information on the sample summary forms did not match the information in the narrative. The lab submitted a revised narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material | | |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD percent recovery (%R) values. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-MSL). Only the associated positive results are estimated (J-MSH) if the %R values indicate a potential high bias. In cases where one outlier is less than the lower control limit and one outlier is greater than the upper control limit, no bias is indicated. If the RPD values indicate uncertainty, associated positive results are estimated (J-MSP).

For Batch BKG0179, two MS/MSD analyses were performed.

- Sample SIB-SC-D23-3-4-07/06/22 was used for the MS/MSD analyses. The MS/MSD %R values for AR1260 were less than the lower control limit; the results for AR1248, AR1254, AR1260, and AR1268 in the parent sample were estimated (J/UJ-MSL).
- Sample SIB-SC-D22-4-5-07/06/22 was used for the MS/MSD analyses. The MS/MSD %R values for AR1260 were less than the lower control limit; the results for AR1248, AR1254, AR1260, and AR1268 in the parent sample were estimated (J/UJ-MSL).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

Samples SIB-SC-E26-3-4-07/06/2022 and FD-01-07/06/2022 were submitted as field duplicates. For AR1254 and AR1260, the RPD values were greater than the control limit. Results for these Aroclors were estimated (J-FDPR) in the parent and field duplicate samples.

Reported Results

The laboratory analyzed several samples at two dilutions due to internal standard outliers. For one sample, both sets of results were reported. In this case, results from one of the dilutions was qualified as do-not-report (DNR-VJ) to indicate which of the two results should not be used.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|---------------------------|----------|-----------|----------------------------|
| SIB-SC-E26-4-5-07/06/2022 | 3x | DNR-VJ | IS outlier |
| | 10X | | Total PCB comparable to 3x |

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes as well as matrix interferences. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD percent recovery values, and precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD and field duplicate RPD values.

Results were estimated due to MS/MSD accuracy outliers and field duplicate precision outliers.

Results were qualified as do-not-report to indicate which data from multiple reported analyses should not be used.

Data that are qualified as do-not-report should not be used. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0097 | 36 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted with this SDG.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For mercury Batch BKG0336, two MS/MSD analyses were performed.

- Sample SIB-SC-C23-2-3-07/06/2022 was used for the MS/MSD analyses. All acceptance criteria were met.
- Sample SIB-SC-D33-5-6-07/07/2022 was also used for the MS/MSD analyses. The %R values were less than the lower control in both the MS and MSD and the RPD was greater than the control limit; all associated mercury results were estimated (J-MSL, MSP).

For mercury Batch BKG0400, two MS/MSD analyses were performed.

- Sample SIB-SC-D23-3-4-07/06/2022 was used for the MS/MSD analyses. The %R value was greater than the upper control limit in the MSD; no results were estimated for the single outlier.
- Sample SIB-SC-D22-4-5-07/06/2022 was also used for the MS/MSD analyses. The %R values were greater than the upper control limit in both the MS and MSD; all associated mercury results were estimated (J-MSH).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 20%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-D23-3-4-07/06/2022 and SIB-SC-D22-4-5-07/06/2022 in mercury preparation batch BKG0400 were used for the laboratory duplicate analyses. The RPD value was greater than the control limit for Sample SIB-SC-D22-4-5-07/06/2022; all associated mercury results were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

FD-01-07/06/2022 & SIB-SC-E26-3-4-07/06/2022

The difference value for mercury was greater than the control limit; mercury results in these two samples were estimated (J-FDPA).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. Precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery and RPD outliers, field duplicate RPD outliers and laboratory duplicate RPD outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW7471B | MERCURY | 0.0404 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW6020B | LEAD | 4.37 | mg/kg | D | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW6020B | COPPER | 26.1 | mg/kg | D | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW6020B | ZINC | 58.7 | mg/kg | D | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW6020B | ARSENIC | 2.54 | mg/kg | D | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-1-2-07/05/2022 | 22G0097-02 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW6020B | LEAD | 5.55 | mg/kg | D | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW7471B | MERCURY | 0.0442 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW6020B | COPPER | 32.3 | mg/kg | D | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW6020B | ARSENIC | 2.86 | mg/kg | D | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-2-3-07/05/2022 | 22G0097-03 | SW6020B | ZINC | 66.7 | mg/kg | D | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW6020B | ZINC | 67.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW7471B | MERCURY | 0.0471 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW6020B | LEAD | 5.5 | mg/kg | D | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW6020B | ARSENIC | 2.69 | mg/kg | D | | | ✓ |
| SIB-SC-B13-3-4-07/05/2022 | 22G0097-04 | SW6020B | COPPER | 33.5 | mg/kg | D | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW6020B | LEAD | 4.99 | mg/kg | D | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW6020B | ARSENIC | 2.92 | mg/kg | D | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW6020B | COPPER | 33.1 | mg/kg | D | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW6020B | ZINC | 67.1 | mg/kg | D | | | ✓ |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW7471B | MERCURY | 0.0552 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-B13-4-5-07/05/2022 | 22G0097-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW7471B | MERCURY | 0.0444 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW6020B | ZINC | 67 | mg/kg | D | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW6020B | COPPER | 33.5 | mg/kg | D | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW6020B | ARSENIC | 2.94 | mg/kg | D | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW6020B | LEAD | 5.07 | mg/kg | D | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B13-5-6-07/05/2022 | 22G0097-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW6020B | LEAD | 51 | mg/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 76.4 | ug/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 161 | ug/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW7471B | MERCURY | 0.351 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW6020B | ZINC | 268 | mg/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW6020B | COPPER | 95.3 | mg/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW6020B | ARSENIC | 7.31 | mg/kg | D | | | ✓ |
| SIB-SC-D23-1-2-07/06/2022 | 22G0097-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW6020B | CADMIUM | 1.18 | mg/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 143 | ug/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW6020B | ARSENIC | 7.53 | mg/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1260 (AROCOLOR 1260) | 146 | ug/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW7471B | MERCURY | 0.341 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW6020B | LEAD | 52.6 | mg/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW6020B | COPPER | 90.6 | mg/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | 76.3 | ug/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW6020B | ZINC | 297 | mg/kg | D | | | ✓ |
| SIB-SC-D23-2-3-07/06/2022 | 22G0097-18 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1254 (AROCOLOR 1254) | 75.9 | ug/kg | D | J | MSL | |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW6020B | COPPER | 53 | mg/kg | D | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW6020B | ZINC | 229 | mg/kg | D | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW7471B | MERCURY | 0.264 | mg/kg | | J | | |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1260 (AROCOLOR 1260) | 92.1 | ug/kg | D | J | MSL | |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW6020B | LEAD | 30.4 | mg/kg | D | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | UJ | MSL | |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW6020B | ARSENIC | 5.75 | mg/kg | D | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | MSL | |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-3-4-07/06/2022 | 22G0097-19 | SW8082A | PCB-1248 (AROCOLOR 1248) | 42.5 | ug/kg | D | J | MSL | |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW6020B | LEAD | 39.1 | mg/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1248 (AROCOLOR 1248) | 61.6 | ug/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW6020B | ARSENIC | 7.15 | mg/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1254 (AROCOLOR 1254) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW6020B | COPPER | 65.8 | mg/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW6020B | ZINC | 259 | mg/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1260 (AROCOLOR 1260) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-4-5-07/06/2022 | 22G0097-20 | SW7471B | MERCURY | 0.395 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW6020B | ARSENIC | 6.15 | mg/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW6020B | COPPER | 64 | mg/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW6020B | ZINC | 235 | mg/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW7471B | MERCURY | 0.276 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1260 (AROCOLOR 1260) | 79.5 | ug/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1248 (AROCOLOR 1248) | 47.9 | ug/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW6020B | LEAD | 36.2 | mg/kg | D | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D23-5-6-07/06/2022 | 22G0097-21 | SW8082A | PCB-1254 (AROCOLOR 1254) | 88.7 | ug/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1260 (AROCLOR 1260) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW7471B | MERCURY | 0.471 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW6020B | ZINC | 253 | mg/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW6020B | COPPER | 106 | mg/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW6020B | ARSENIC | 6.78 | mg/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW6020B | LEAD | 57.8 | mg/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1248 (AROCLOR 1248) | 76.9 | ug/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | PCB-1254 (AROCLOR 1254) | 202 | ug/kg | D | | | ✓ |
| SIB-SC-D22-1-2-07/06/2022 | 22G0097-32 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1254 (AROCLOR 1254) | 103 | ug/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1248 (AROCLOR 1248) | 59.2 | ug/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1260 (AROCLOR 1260) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW7471B | MERCURY | 0.383 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW6020B | ZINC | 269 | mg/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW6020B | COPPER | 76.9 | mg/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW6020B | ARSENIC | 6.86 | mg/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW6020B | LEAD | 44.8 | mg/kg | D | | | ✓ |
| SIB-SC-D22-2-3-07/06/2022 | 22G0097-33 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1248 (AROCLOR 1248) | 50.3 | ug/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1254 (AROCLOR 1254) | 93.2 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
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|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1260 (AROCLOR 1260) | 95.8 | ug/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW7471B | MERCURY | 0.196 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW6020B | ZINC | 237 | mg/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW6020B | COPPER | 64.9 | mg/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW6020B | CADMIUM | 0.68 | mg/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW6020B | LEAD | 35.4 | mg/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW6020B | ARSENIC | 6.93 | mg/kg | D | | | ✓ |
| SIB-SC-D22-3-4-07/06/2022 | 22G0097-34 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | MSL | |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | MSL | |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1254 (AROCLOR 1254) | 93.7 | ug/kg | D | J | MSL | |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW7471B | MERCURY | 0.233 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW6020B | ZINC | 228 | mg/kg | D | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW6020B | COPPER | 58 | mg/kg | D | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW6020B | ARSENIC | 6.12 | mg/kg | D | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW6020B | LEAD | 35.7 | mg/kg | D | | | ✓ |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1260 (AROCLOR 1260) | 98.2 | ug/kg | D | J | MSL | |
| SIB-SC-D22-4-5-07/06/2022 | 22G0097-35 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.3 | ug/kg | D | J | MSL | |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW6020B | ARSENIC | 6.1 | mg/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 235 | ug/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 73.3 | ug/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW6020B | LEAD | 33.6 | mg/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW7471B | MERCURY | 0.255 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW6020B | ZINC | 248 | mg/kg | D | | | ✓ |
| SIB-SC-D22-5-6-07/06/2022 | 22G0097-36 | SW6020B | COPPER | 59.6 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW7471B | MERCURY | 0.33 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1260 (AROCLOR 1260) | 98.8 | ug/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW6020B | COPPER | 102 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW6020B | ARSENIC | 9.42 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1254 (AROCLOR 1254) | 92.4 | ug/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.4 | ug/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW6020B | LEAD | 32.8 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW6020B | ZINC | 225 | mg/kg | D | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-1-2-07/06/2022 | 22G0097-46 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1260 (AROCLOR 1260) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1248 (AROCLOR 1248) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW6020B | LEAD | 41.9 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------------|------------------------------------|
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1254 (AROCLOR 1254) | 210 | ug/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW6020B | ARSENIC | 6.56 | mg/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW7471B | MERCURY | 0.185 | mg/kg | | J | MSH, LDPR | |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW6020B | ZINC | 254 | mg/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW6020B | COPPER | 72.1 | mg/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E26-2-3-07/06/2022 | 22G0097-47 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW6020B | ARSENIC | 4.51 | mg/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1248 (AROCLOR 1248) | 39 | ug/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1254 (AROCLOR 1254) | 112 | ug/kg | D | J | FDPR | |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1260 (AROCLOR 1260) | 74.5 | ug/kg | D | J | FDPR | |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW7471B | MERCURY | 0.128 | mg/kg | | J | MSH, LDPR, FDPA | |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW6020B | ZINC | 119 | mg/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW6020B | COPPER | 47.4 | mg/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW6020B | CADMIUM | 0.28 | mg/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW6020B | LEAD | 21 | mg/kg | D | | | ✓ |
| SIB-SC-E26-3-4-07/06/2022 | 22G0097-48 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW6020B | COPPER | 60.6 | mg/kg | D | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1254 (AROCLOR 1254) | 35.5 | ug/kg | D | J | FDPR | |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1260 (AROCLOR 1260) | 30.5 | ug/kg | D | J | FDPR | |
| FD-01-07/06/2022 | 22G0097-49 | SW6020B | ZINC | 155 | mg/kg | D | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|----------------|------------------------------------|
| FD-01-07/06/2022 | 22G0097-49 | SW6020B | ARSENIC | 5.22 | mg/kg | D | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW6020B | LEAD | 25 | mg/kg | D | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1248 (AROCOLOR 1248) | 17.1 | ug/kg | D | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-01-07/06/2022 | 22G0097-49 | SW7471B | MERCURY | 0.391 | mg/kg | | J | MSL, MSP, FDPA | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1260 (AROCOLOR 1260) | 62.4 | ug/kg | D | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW6020B | LEAD | 31 | mg/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW6020B | ARSENIC | 4.53 | mg/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW6020B | COPPER | 43.5 | mg/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW7471B | MERCURY | 0.388 | mg/kg | | J | MSL, MSP | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1248 (AROCOLOR 1248) | 13.8 | ug/kg | D | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1254 (AROCOLOR 1254) | 45.4 | ug/kg | D | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | VJ | |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 83.4 | ug/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 64.8 | ug/kg | D | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-4-5-07/06/2022 | 22G0097-50RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW6020B | ZINC | 52.3 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW6020B | LEAD | 5.16 | mg/kg | D | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW6020B | ARSENIC | 2.71 | mg/kg | D | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW6020B | COPPER | 17.1 | mg/kg | D | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW7471B | MERCURY | 0.0341 | mg/kg | | J | MSL, MSP | |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1260 (AROCLOR 1260) | 10.8 | ug/kg | | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1254 (AROCLOR 1254) | 7.4 | ug/kg | | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E26-5-6-07/06/2022 | 22G0097-51 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1248 (AROCLOR 1248) | 20 | ug/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1254 (AROCLOR 1254) | 64.6 | ug/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW8082A | PCB-1260 (AROCLOR 1260) | 50.4 | ug/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW7471B | MERCURY | 0.131 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW6020B | COPPER | 69.8 | mg/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW6020B | ARSENIC | 6.22 | mg/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW6020B | LEAD | 24.5 | mg/kg | D | | | ✓ |
| SIB-SC-C23-1-2-07/06/2022 | 22G0097-55 | SW6020B | ZINC | 203 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW7471B | MERCURY | 0.11 | mg/kg | | J | | |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.3 | ug/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1248 (AROCLOR 1248) | 17.4 | ug/kg | D J | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1254 (AROCLOR 1254) | 39 | ug/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW6020B | LEAD | 24.1 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW6020B | ZINC | 187 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW6020B | COPPER | 61.8 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW6020B | ARSENIC | 5.78 | mg/kg | D | | | ✓ |
| SIB-SC-C23-2-3-07/06/2022 | 22G0097-56 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1260 (AROCLOR 1260) | 88.1 | ug/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1248 (AROCLOR 1248) | 60.6 | ug/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW6020B | LEAD | 34.7 | mg/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW8082A | PCB-1254 (AROCLOR 1254) | 159 | ug/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW6020B | ARSENIC | 4.97 | mg/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW6020B | COPPER | 59.8 | mg/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW6020B | ZINC | 176 | mg/kg | D | | | ✓ |
| SIB-SC-C23-3-4-07/06/2022 | 22G0097-57 | SW7471B | MERCURY | 0.218 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1248 (AROCLOR 1248) | 77.6 | ug/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1254 (AROCLOR 1254) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1260 (AROCLOR 1260) | 176 | ug/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW7471B | MERCURY | 0.249 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW6020B | COPPER | 62.5 | mg/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW6020B | ARSENIC | 6.39 | mg/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW6020B | ZINC | 248 | mg/kg | D | | | ✓ |
| SIB-SC-C23-4-5-07/06/2022 | 22G0097-58 | SW6020B | LEAD | 37.7 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1260 (AROCLOR 1260) | 283 | ug/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1248 (AROCLOR 1248) | 85.6 | ug/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1254 (AROCLOR 1254) | 203 | ug/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW6020B | ARSENIC | 6.51 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW7471B | MERCURY | 0.203 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW6020B | ZINC | 261 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW6020B | COPPER | 60.3 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW6020B | LEAD | 36.7 | mg/kg | D | | | ✓ |
| SIB-SC-C23-5-6-07/06/2022 | 22G0097-59 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW7471B | MERCURY | 0.213 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW6020B | ARSENIC | 5.98 | mg/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW6020B | LEAD | 36.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW6020B | ZINC | 226 | mg/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1260 (AROCOLOR 1260) | 62.5 | ug/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1254 (AROCOLOR 1254) | 65.2 | ug/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1248 (AROCOLOR 1248) | 36.4 | ug/kg | D | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-1-2-07/07/2022 | 22G0097-70 | SW6020B | COPPER | 54.8 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW6020B | ARSENIC | 6.27 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW6020B | COPPER | 59 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW6020B | ZINC | 213 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW7471B | MERCURY | 0.259 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1260 (AROCOLOR 1260) | 67.5 | ug/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1248 (AROCOLOR 1248) | 38.8 | ug/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW6020B | LEAD | 40.3 | mg/kg | D | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-2-3-07/07/2022 | 22G0097-71 | SW8082A | PCB-1254 (AROCOLOR 1254) | 69.6 | ug/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW6020B | LEAD | 54.1 | mg/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW6020B | ZINC | 266 | mg/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW7471B | MERCURY | 0.241 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1260 (AROCOLOR 1260) | 93.8 | ug/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1254 (AROCOLOR 1254) | 81.8 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1248 (AROCOLOR 1248) | 44.4 | ug/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW6020B | ARSENIC | 8.38 | mg/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW6020B | COPPER | 114 | mg/kg | D | | | ✓ |
| SIB-SC-C33-3-4-07/07/2022 | 22G0097-72 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW6020B | LEAD | 52.8 | mg/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW6020B | ARSENIC | 7.04 | mg/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW6020B | COPPER | 94.3 | mg/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW6020B | ZINC | 278 | mg/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW7471B | MERCURY | 0.226 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1260 (AROCOLOR 1260) | 189 | ug/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1248 (AROCOLOR 1248) | 84.9 | ug/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1254 (AROCOLOR 1254) | 158 | ug/kg | D | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-4-5-07/07/2022 | 22G0097-73 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1248 (AROCOLOR 1248) | 52.6 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW6020B | ARSENIC | 6.56 | mg/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW6020B | COPPER | 61.5 | mg/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW6020B | ZINC | 234 | mg/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW6020B | LEAD | 37.1 | mg/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW7471B | MERCURY | 0.205 | mg/kg | | J | MSL, MSP | |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1254 (AROCOLOR 1254) | 97.4 | ug/kg | D | | | ✓ |
| SIB-SC-C33-5-6-07/07/2022 | 22G0097-74 | SW8082A | PCB-1260 (AROCOLOR 1260) | 98.2 | ug/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW6020B | ARSENIC | 6.57 | mg/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW6020B | LEAD | 40.3 | mg/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1248 (AROCOLOR 1248) | 44.1 | ug/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW6020B | COPPER | 59 | mg/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW6020B | ZINC | 246 | mg/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW7471B | MERCURY | 0.182 | mg/kg | | J | MSL, MSP | |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1260 (AROCOLOR 1260) | 72 | ug/kg | D | | | ✓ |
| SIB-SC-D33-1-2-07/07/2022 | 22G0097-84 | SW8082A | PCB-1254 (AROCOLOR 1254) | 75.9 | ug/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW6020B | COPPER | 68 | mg/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW6020B | ZINC | 213 | mg/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW7471B | MERCURY | 0.158 | mg/kg | | J | MSL, MSP | |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW6020B | ARSENIC | 7.11 | mg/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1260 (AROCOLOR 1260) | 64.4 | ug/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW6020B | LEAD | 44.2 | mg/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1248 (AROCLOR 1248) | 33.8 | ug/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1254 (AROCLOR 1254) | 63.8 | ug/kg | D | | | ✓ |
| SIB-SC-D33-2-3-07/07/2022 | 22G0097-85 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW7471B | MERCURY | 0.225 | mg/kg | | J | MSL, MSP | |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.1 | ug/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1260 (AROCLOR 1260) | 116 | ug/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW6020B | ZINC | 273 | mg/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW6020B | COPPER | 101 | mg/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW6020B | CADMIUM | 0.68 | mg/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW6020B | ARSENIC | 7.01 | mg/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW6020B | LEAD | 57.3 | mg/kg | D | | | ✓ |
| SIB-SC-D33-3-4-07/07/2022 | 22G0097-86 | SW8082A | PCB-1254 (AROCLOR 1254) | 93.7 | ug/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW6020B | LEAD | 46.7 | mg/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW6020B | COPPER | 80.1 | mg/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1248 (AROCLOR 1248) | 93.3 | ug/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW6020B | ARSENIC | 6.61 | mg/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW6020B | ZINC | 245 | mg/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW7471B | MERCURY | 0.332 | mg/kg | | J | MSL, MSP | |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1260 (AROCLOR 1260) | 179 | ug/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1254 (AROCLOR 1254) | 161 | ug/kg | D | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-4-5-07/07/2022 | 22G0097-87 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW6020B | ARSENIC | 6.49 | mg/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1254 (AROCLOR 1254) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1248 (AROCLOR 1248) | 62.5 | ug/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1260 (AROCLOR 1260) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW7471B | MERCURY | 0.375 | mg/kg | | J | MSL, MSP | |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW6020B | ZINC | 256 | mg/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW6020B | LEAD | 42 | mg/kg | D | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D33-5-6-07/07/2022 | 22G0097-88 | SW6020B | COPPER | 68.1 | mg/kg | D | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|----------------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | Analytical Resources, Inc. (ARI) |
| SDG | 22G0097 |
| HGL Reviewer | Ken Rapuano 1.27.23 |
| HGL QC Review | Deanna Valdebenito 2.14.23 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07/12/2022 is the first EB collected after the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

PCBs as Aroclors – 8082A

Reported Results: The validator correctly selected the 10x dilution result for sample SIB-SC-E26-4-5-07/06/2022 as the usable results and qualified the 3x dilution results with DNR and reason code EXC. **The “reportable_result” field in the corresponding Excel file should be changed from Yes to No for all DNR results.** The text DV report indicated that the reason code for assigning DNR qualifiers; the correct EXC reason code was applied by the validator in the database file.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Final Result | Modified Final Qualifier | Modified Final Reason Code |
|---------------------------|-------------------------------|------------------|---------------------|---|--------------------------|----------------------------|
| SIB-SC-E26-4-5-07/06/2022 | All reported from 3x dilution | varies | DNR | Change “reportable_result” field from “Yes” to “No” | | |

ICP-MS Metals and Mercury – 6020B and 7471B

MS/MSD: The mercury MS/MSD performed on sample SIB-SC-C23-2-3-07/06/2022 had all %R and RPD results in control. The validator applied J qualifiers to all the mercury results prepared in batch BKG0336 due to the discrepancies noted in the MS/MSD performed on sample SIB-SC-D33-5-6-07/07/2022 prepared in the same batch. There is sample-specific evidence that the mercury result reported for sample SIB-SC-C23-2-3-07/06/2022 is not affected by a matrix effect. **The J qualifier applied to the mercury result reported for sample SIB-SC-C23-2-3-07/06/2022 is removed.** The validator did not apply any reason code to this mercury result; no reason code is required following the removal of the qualifier.

The DVR indicated that no qualification was required for the high %R in the mercury MSD performed on sample SIB-SC-D23-3-4-07/06/2022. In the judgment of the HGL reviewer, the high MSD result requires qualification. The validator applied a J qualifier to all mercury results prepared in batch BKG0400 due to MS/MSD and laboratory duplicate results for the QC samples prepared using sample SIB-SC-D22-4-5-07/06/2022 in the same batch, including the mercury result for sample SIB-SC-D23-3-4-07/06/2022 and this J qualifier should be retained. **Reason code MSH should be added to the mercury result for sample SIB-SC-D23-3-4-07/06/2022.**

Qualification Modification Table (all results in mg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Validated Reason Code | Modified Final Qualifier | Modified Final Reason Code |
|---------------------------|---------|------------------|---------------------|-----------------------|--------------------------|----------------------------|
| SIB-SC-D23-3-4-07/06/2022 | Mercury | 0.264 | J | -- | J | MSH |
| SIB-SC-C23-2-3-07/06/2022 | Mercury | 0.11 | J | -- | -- | -- |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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Prepared by:

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EcoChem Project: C28601-1

SDG: 22G00165

April 3, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of full review (EPA Stage 4) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0165 | SIB-SC-C34-0-1-07072022 | 22G0165-01 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C34-1-2-07072022 | 22G0165-02 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C34-2-3-07072022 | 22G0165-03 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SE | ✓ | ✓ | ✓ |
| 22G0165 | FD-02-07/07/2022 | 22G0165-05 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C34-4-5-07072022 | 22G0165-06 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C34-5-6-07072022 | 22G0165-07 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C35-1-2-07072022 | 22G0165-18 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C35-2-3-07072022 | 22G0165-19 | SE | ✓ | ✓ | ✓ |
| 22G0165 | SIB-SC-C35-3-4-07072022 | 22G0165-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of analytical data from the analysis of groundwater samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0165 | 10 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|-----------------------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Internal Standards |
| ✓ | Initial Calibration (ICAL) | 1 | Field Duplicates |
| ✓ | Continuing Calibration (CCAL) | 1 | Standard Reference Material (SRM) |
| ✓ | Laboratory Blanks | ✓ | Target Analyte List |
| 1 | Field Blanks | 1 | Reporting Limits |
| ✓ | Surrogate Compounds | 2 | Compound Identification |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Calculation Verification |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to the parent sample only.

Sample SIB-SC-C34-1-2-07/07/2022 was analyzed as the batch MS/MSD. The %R value of AR1260 was less than the lower control limit in the MS but within the control limit in the MSD. The parent sample was qualified J-MSL.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-C34-3-4-07/07/2022 & FD-02-07/07/2022, were submitted. Field precision was acceptable.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Reporting Limits

Samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

Compound Identification

With the following exception, the second column confirmation percent difference (%D) values were less than 40%. For Sample SIB-SC-C35-1-2-07072022, the %D value for AR1248 was greater than the control limit. This result was estimated (J-CF).

Calculation Verification

Calculation verifications were performed for this SDG. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

Results were estimated due to a dual column confirmation precision outlier.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES AND MATRIX | VALIDATION LEVEL |
|---------|------------------------------|------------------|
| 22G0165 | 10 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The method 6020B total quantitation reports for the 7/29/22 analyses were missing from the laboratory report and the 7/28/22 analyses were redacted for this SDG. The laboratory was contacted and resubmitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

| | | | |
|---|---|---|---|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | ICP-MS Tune | ✓ | ICP-MS Internal standards |
| ✓ | Initial Calibration | ✓ | Interference Check Samples |
| ✓ | Calibration Verification | ✓ | Serial Dilutions |
| ✓ | CRDL Standards | 1 | Field Duplicates |
| 1 | Laboratory Blanks | ✓ | Reporting Limits |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Calculation Verification (Full validation only) |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J) and non-detects are estimated (UJ) to indicate a potential low bias.

Mercury was detected in the method blank. All sample results were greater than the action level. No data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For the mercury analyses, Sample SIB-SC-C34-0-1-07/07/2022 was analyzed as the matrix spike. Mercury was not recovered in the MS/MSD analyses. All associated field sample results were estimated (J-MSLX) to indicate the potential very low bias.

Field Duplicates

The RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

One set of field duplicates, SIB-SC-C34-3-4-07/07/2022 and FD-02-07/07/2022, were submitted. All field precision criteria were met.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and MS/MSD %R values and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on a MS/MSD accuracy outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW6020B | ARSENIC | 7.49 | mg/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW6020B | CADMIUM | 0.6 | mg/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW6020B | COPPER | 78.6 | mg/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW6020B | LEAD | 44 | mg/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW6020B | ZINC | 291 | mg/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW7471B | MERCURY | 0.311 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 35.1 | ug/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 68 | ug/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 59.4 | ug/kg | D | | | ✓ |
| SIB-SC-C34-0-1-07072022 | 22G0165-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW6020B | ARSENIC | 7.02 | mg/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW6020B | COPPER | 57.7 | mg/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW6020B | LEAD | 45.9 | mg/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW6020B | ZINC | 243 | mg/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW7471B | MERCURY | 0.257 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.3 | ug/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 85.1 | ug/kg | D | | | ✓ |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.4 | ug/kg | D | J | MSL | |
| SIB-SC-C34-1-2-07072022 | 22G0165-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW6020B | ARSENIC | 6.23 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW6020B | COPPER | 58.8 | mg/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW6020B | LEAD | 42.7 | mg/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW6020B | ZINC | 232 | mg/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW7471B | MERCURY | 0.205 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 28.8 | ug/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 50.2 | ug/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 41.5 | ug/kg | D | | | ✓ |
| SIB-SC-C34-2-3-07072022 | 22G0165-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW6020B | ARSENIC | 7.17 | mg/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW6020B | COPPER | 65 | mg/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW6020B | LEAD | 48.6 | mg/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW6020B | ZINC | 219 | mg/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW7471B | MERCURY | 0.215 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.1 | ug/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 89.4 | ug/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 49 | ug/kg | D | | | ✓ |
| SIB-SC-C34-3-4-07/07/2022 | 22G0165-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW6020B | ARSENIC | 6.33 | mg/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| FD-02-07/07/2022 | 22G0165-05 | SW6020B | COPPER | 58.3 | mg/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW6020B | LEAD | 41.2 | mg/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW6020B | ZINC | 195 | mg/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW7471B | MERCURY | 0.317 | mg/kg | B | J | MSLX | |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.6 | ug/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 89.9 | ug/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 50 | ug/kg | D | | | ✓ |
| FD-02-07/07/2022 | 22G0165-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW6020B | ARSENIC | 6.77 | mg/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW6020B | COPPER | 74.1 | mg/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW6020B | LEAD | 46.9 | mg/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW7471B | MERCURY | 0.256 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 37.9 | ug/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.6 | ug/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 59.8 | ug/kg | D | | | ✓ |
| SIB-SC-C34-4-5-07072022 | 22G0165-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW6020B | ARSENIC | 7.99 | mg/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW6020B | CADMIUM | 0.7 | mg/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW6020B | COPPER | 154 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW6020B | LEAD | 87 | mg/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW6020B | ZINC | 305 | mg/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW7471B | MERCURY | 0.867 | mg/kg | B | J | MSLX | |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 83 | ug/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 146 | ug/kg | D | | | ✓ |
| SIB-SC-C34-5-6-07072022 | 22G0165-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW6020B | ARSENIC | 6.25 | mg/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW6020B | COPPER | 53.1 | mg/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW6020B | LEAD | 39.4 | mg/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW6020B | ZINC | 225 | mg/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW7471B | MERCURY | 0.274 | mg/kg | B | J | MSLX | |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 31.9 | ug/kg | D | J | CF | |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 83.9 | ug/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 52.3 | ug/kg | D | | | ✓ |
| SIB-SC-C35-1-2-07072022 | 22G0165-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW6020B | ARSENIC | 6.16 | mg/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW6020B | COPPER | 55.1 | mg/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW6020B | LEAD | 39.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW6020B | ZINC | 212 | mg/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW7471B | MERCURY | 0.191 | mg/kg | B | J | MSLX | |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.8 | ug/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 67.4 | ug/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 35.2 | ug/kg | D | | | ✓ |
| SIB-SC-C35-2-3-07072022 | 22G0165-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW6020B | ARSENIC | 6.33 | mg/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW6020B | COPPER | 55.7 | mg/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW6020B | LEAD | 39.7 | mg/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW6020B | ZINC | 229 | mg/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW7471B | MERCURY | 0.192 | mg/kg | B | J | MSLX | |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 31.3 | ug/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 54.7 | ug/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 45.1 | ug/kg | D | | | ✓ |
| SIB-SC-C35-3-4-07072022 | 22G0165-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 4 |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0165 |
| HGL Reviewer | Deanna Valdebenito 4/4/2023 |
| HGL Senior Review | Ken Rapuano 4/6/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0165 CLPLIKE (Rev 1) reports results using the DoD conventions for sensitivity limits (DL/LOD/LOQ) instead of the project sensitivity conventions (MDL/RL). Non-detected results are reported as LOD U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07/12/2022 is the first EB collected after the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

No additional issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0169

January 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez".

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0169 | SIB-SC-C35-4-5-07072022 | 22G0169-01 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-C35-5-6-07072022 | 22G0169-02 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-B35-1-2-07072022 | 22G0169-11 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-B35-2-3-07072022 | 22G0169-12 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-B35-3-4-07072022 | 22G0169-13 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SE | ✓ | ✓ | ✓ |
| 22G0169 | FD-03-07/07/2022 | 22G0169-15 | SE | ✓ | ✓ | ✓ |
| 22G0169 | SIB-SC-B35-5-6-07072022 | 22G0169-16 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HydroGeologics -Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0169 | 8 Sediment | Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 1 | Reporting Limits |
| ✓ | Laboratory Control Samples (LCS/LCSD) | ✓ | Reported Results |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Sample SIB-SC-B35-5-6-07/07/2022 was used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The %R value for AR1260 was less than the lower control limit for the MS but within the control limit for the MSD; no qualifiers were assigned for the single outlier.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

Samples SIB-SC-B35-4-5-07/07/2022 and FD-03-07/07/2022 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exception, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD percent recovery values, and precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0169 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

No matrix spike/matrix spike duplicates were reported for the mercury analyses. Accuracy was evaluated using the laboratory control sample recoveries. Precision was not evaluated.

Laboratory Duplicates

No laboratory duplicates were reported for the mercury analyses. Precision was not evaluated.

Field Duplicates

One set of field duplicates was submitted:

FD-03-07/07/2022 & SIB-SC-B35-4-5-07072022

All acceptance criteria were within control limits.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW6020B | ARSENIC | 6.92 | mg/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW6020B | COPPER | 66.6 | mg/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW6020B | LEAD | 44.3 | mg/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW6020B | ZINC | 214 | mg/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.3 | ug/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 55.3 | ug/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.1 | ug/kg | D | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-4-5-07072022 | 22G0169-01RE1 | SW7471B | MERCURY | 0.302 | mg/kg | | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW6020B | ARSENIC | 7.73 | mg/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW6020B | COPPER | 85.5 | mg/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW6020B | LEAD | 56.7 | mg/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW6020B | ZINC | 257 | mg/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 29.6 | ug/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 54.9 | ug/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 56.6 | ug/kg | D | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C35-5-6-07072022 | 22G0169-02RE1 | SW7471B | MERCURY | 0.231 | mg/kg | | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW6020B | ARSENIC | 3.45 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW6020B | COPPER | 37.1 | mg/kg | D | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW6020B | LEAD | 5.8 | mg/kg | D | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW6020B | ZINC | 71.3 | mg/kg | D | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-1-2-07072022 | 22G0169-11RE1 | SW7471B | MERCURY | 0.0437 | mg/kg | | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW6020B | ARSENIC | 4.14 | mg/kg | D | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW6020B | COPPER | 40.8 | mg/kg | D | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW6020B | LEAD | 5.91 | mg/kg | D | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW6020B | ZINC | 70.3 | mg/kg | D | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-2-3-07072022 | 22G0169-12RE1 | SW7471B | MERCURY | 0.0497 | mg/kg | | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW6020B | ARSENIC | 3.67 | mg/kg | D | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW6020B | COPPER | 37.9 | mg/kg | D | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW6020B | LEAD | 5.87 | mg/kg | D | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW6020B | ZINC | 70.8 | mg/kg | D | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-3-4-07072022 | 22G0169-13RE1 | SW7471B | MERCURY | 0.0427 | mg/kg | | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW6020B | ARSENIC | 3.66 | mg/kg | D | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW6020B | COPPER | 36.5 | mg/kg | D | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW6020B | LEAD | 5.77 | mg/kg | D | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW6020B | ZINC | 68.6 | mg/kg | D | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-4-5-07/07/2022 | 22G0169-14RE1 | SW7471B | MERCURY | 0.043 | mg/kg | | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW6020B | ARSENIC | 3.83 | mg/kg | D | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW6020B | COPPER | 37.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| FD-03-07/07/2022 | 22G0169-15 | SW6020B | LEAD | 5.9 | mg/kg | D | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW6020B | ZINC | 71 | mg/kg | D | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-03-07/07/2022 | 22G0169-15RE1 | SW7471B | MERCURY | 0.0429 | mg/kg | | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW6020B | ARSENIC | 3.65 | mg/kg | D | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW6020B | COPPER | 36.9 | mg/kg | D | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW6020B | LEAD | 6.04 | mg/kg | D | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW6020B | ZINC | 69.6 | mg/kg | D | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B35-5-6-07072022 | 22G0169-16RE1 | SW7471B | MERCURY | 0.0505 | mg/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0169 |
| HGL Reviewer | Ken Rapuano 6/27/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07122022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

The mercury results are reported from extracts prepared 81 days from sampling; the laboratory PM confirmed that the samples were prepared on archived material stored frozen in accordance with the QAPP. No qualification required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0173

January 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez".

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0173 | SIB-SC-E35-1-2-07082022 | 22G0173-07 | SE | ✓ | ✓ | ✓ |
| 22G0173 | SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SE | ✓ | ✓ | ✓ |
| 22G0173 | FD-04-07/08/2022 | 22G0173-09 | SE | ✓ | ✓ | ✓ |
| 22G0173 | SIB-SC-E35-3-4-07082022 | 22G0173-10 | SE | ✓ | ✓ | ✓ |
| 22G0173 | SIB-SC-E35-4-5-07082022 | 22G0173-11 | SE | ✓ | ✓ | ✓ |
| 22G0173 | SIB-SC-E35-5-6-07082022 | 22G0173-12 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 20G0173 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicate

Sample SIB-SC-E35-3-4-07082022 was used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The %R value of AR1260 was less than the lower control limit for the MS but was within control limits for the MSD; no qualifiers were assigned for the single outlier.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

Samples SIB-SC-E35-2-3-07/08/2022 & FD-04-07/08/2022 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD, and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0173 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| ✓ | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Field Duplicates

One set of field duplicates was submitted:

FD-04-07082022 & SIB-SC-E35-2-3-07082022

All acceptance criteria were within control limits.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW6020B | ARSENIC | 5.74 | mg/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW6020B | COPPER | 52.9 | mg/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW6020B | LEAD | 40.6 | mg/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW6020B | ZINC | 188 | mg/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 26.5 | ug/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 50.3 | ug/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 40.4 | ug/kg | D | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-1-2-07082022 | 22G0173-07RE1 | SW7471B | MERCURY | 0.149 | mg/kg | | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW6020B | ARSENIC | 5.22 | mg/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW6020B | COPPER | 52.6 | mg/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW6020B | LEAD | 39.1 | mg/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW6020B | ZINC | 211 | mg/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 21.7 | ug/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 42.2 | ug/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 36 | ug/kg | D | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-2-3-07/08/2022 | 22G0173-08RE1 | SW7471B | MERCURY | 0.151 | mg/kg | | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW6020B | ARSENIC | 5.53 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| FD-04-07/08/2022 | 22G0173-09 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW6020B | COPPER | 51.5 | mg/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW6020B | LEAD | 38.4 | mg/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW6020B | ZINC | 175 | mg/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 22.5 | ug/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 42.4 | ug/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.3 | ug/kg | D | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-04-07/08/2022 | 22G0173-09RE1 | SW7471B | MERCURY | 0.143 | mg/kg | | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW6020B | ARSENIC | 7.1 | mg/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW6020B | CADMIUM | 0.67 | mg/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW6020B | COPPER | 87.7 | mg/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW6020B | LEAD | 69.2 | mg/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW6020B | ZINC | 272 | mg/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 29.3 | ug/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 54.5 | ug/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 56 | ug/kg | D | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-3-4-07082022 | 22G0173-10RE1 | SW7471B | MERCURY | 0.192 | mg/kg | | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW6020B | ARSENIC | 6.91 | mg/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW6020B | COPPER | 60.3 | mg/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW6020B | LEAD | 42.1 | mg/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW6020B | ZINC | 240 | mg/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 36 | ug/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 57.2 | ug/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 59.1 | ug/kg | D | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-4-5-07082022 | 22G0173-11RE1 | SW7471B | MERCURY | 0.442 | mg/kg | | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW6020B | ARSENIC | 6.42 | mg/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW6020B | COPPER | 56.1 | mg/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW6020B | LEAD | 39.9 | mg/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW6020B | ZINC | 229 | mg/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 35.8 | ug/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 57.6 | ug/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 57.3 | ug/kg | D | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E35-5-6-07082022 | 22G0173-12RE1 | SW7471B | MERCURY | 0.355 | mg/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0173 |
| HGL Reviewer | Ken Rapuano 6/27/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07122022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

A laboratory duplicate was performed using sample SIB-SC-E35-3-4-07/08/2022. The mercury results exceeded the laboratory's absolute difference limit by only 0.0009 mg/kg (RL = 0.0451, difference = 0.046). In the judgment of the HGL reviewer, this exceedance is nominal and no additional qualification is required.

The mercury results are reported from extracts prepared 73 days from sampling; the laboratory PM confirmed that the samples were prepared on archived material stored frozen in accordance with the QAPP. No qualification required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G00178

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of full review (EPA Stage 3 and 4) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0178 | SIB-SC-E36-5-6-07082022 | 22G0178-01 | SE | ✓ | ✓ | ✓ |
| 22G0178 | SIB-SC-D36-1-2-07082022 | 22G0178-12 | SE | ✓ | ✓ | ✓ |
| 22G0178 | SIB-SC-D36-2-3-07082022 | 22G0178-13 | SE | ✓ | ✓ | ✓ |
| 22G0178 | SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SE | ✓ | ✓ | ✓ |
| 22G0178 | FD-05-07/08/2022 | 22G0178-15 | SE | ✓ | ✓ | ✓ |
| 22G0178 | SIB-SC-D36-4-5-07082022 | 22G0178-16 | SE | ✓ | ✓ | ✓ |
| 22G0178 | SIB-SC-D36-5-6-07082022 | 22G0178-17 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0178 | 7 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|-----------------------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Internal Standards |
| ✓ | Initial Calibration (ICAL) | 2 | Field Duplicates |
| ✓ | Continuing Calibration (CCAL) | 1 | Standard Reference Material (SRM) |
| ✓ | Laboratory Blanks | ✓ | Target Analyte List |
| 1 | Field Blanks | 1 | Reporting Limits |
| ✓ | Surrogate Compounds | 2 | Compound Identification |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Calculation Verification |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB01-07122022 was free from contamination.

Internal Standards

Internal standards (IS) were added to all samples and laboratory QC samples. With the noted exception, all internal standard areas were within 50 – 200% of the associated continuing calibration standard.

For Samples SIB-SC-E36-5-6-07/08/2022 and SIB-SC-D36-5-6-07/08/2022, the area for hexabromobiphenyl was less than the control limit, indicating a potential low bias. This internal standard is used to quantitate AR1260, AR1262, and AR1268; therefore, results for these Aroclors were estimated (J/UJ-IRL).

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-D36-3-4-07/08/2022 & FD-05-07/08/2022, were submitted. For Aroclor 1260, the difference in values between the parent and duplicate sample were greater than the control limit. The results were estimated (J-FDPA).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Reporting Limits

All samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

Compound Identification

With the following exceptions, the second column confirmation percent difference (%D) values were less than 40%. For Sample SIB-SC-D36-1-2-07/08/2022, the %D value for AR1260 was greater than the control limit. This result was estimated (NJ-CF). For Sample SIB-SC-D36-1-2-07/08/2022, the %D value for AR1260 was greater than the control limit. This result was estimated (J-CF).

Calculation Verification

Calculation verifications were performed for this SDG. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control/laboratory control duplicate (LCS/LCSD), and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. With the noted exception, precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

Data were estimated due to internal standard accuracy outliers and for field duplicate and dual column precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES AND MATRIX | VALIDATION LEVEL |
|---------|------------------------------|------------------|
| 22G0178 | 7 Sediment | Stage 3 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The method 6020B total quantitation reports were redacted for this SDG. The laboratory was contacted and resubmitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

| | | | |
|---|---|---|---|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | ICP-MS Tune | ✓ | ICP-MS Internal standards |
| ✓ | Initial Calibration | ✓ | Interference Check Samples |
| ✓ | Calibration Verification | ✓ | Serial Dilutions |
| ✓ | CRDL Standards | 1 | Field Duplicates |
| 1 | Laboratory Blanks | ✓ | Reporting Limits |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Calculation Verification (Full validation only) |
| ✓ | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J-7) and non-detects are estimated (UJ-7) to indicate a potential low bias.

Several instrument blanks on 10/18/22 had negative responses for mercury. All associated sample results were greater than the 5x action level; no data were qualified.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB01-07122022 was free from contamination.

Field Duplicates

The RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

Samples SIB-SC-D36-3-4-07/08/2022 & FD-05-07/08/2022, were submitted as field duplicates. All acceptance criteria were met.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample and MS/MSD %R values and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW6020B | ARSENIC | 7.31 | mg/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW6020B | CADMIUM | 0.69 | mg/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW6020B | COPPER | 84.6 | mg/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW6020B | LEAD | 68.7 | mg/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW6020B | ZINC | 262 | mg/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW7471B | MERCURY | 0.221 | mg/kg | | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | Aroclor 1262 | | ug/kg | D U | UJ | IRL | |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 35 | ug/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 70.3 | ug/kg | D | | | ✓ |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 93.3 | ug/kg | D | J | IRL | |
| SIB-SC-E36-5-6-07082022 | 22G0178-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW6020B | ARSENIC | 3.3 | mg/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW6020B | COPPER | 27.7 | mg/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW6020B | LEAD | 19.4 | mg/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW6020B | ZINC | 108 | mg/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW7471B | MERCURY | 0.0678 | mg/kg | | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 25.4 | ug/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 44.6 | ug/kg | D | | | ✓ |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 30.9 | ug/kg | D | NJ | CF | |
| SIB-SC-D36-1-2-07082022 | 22G0178-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW6020B | ARSENIC | 4.82 | mg/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW6020B | COPPER | 34.7 | mg/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW6020B | LEAD | 24.9 | mg/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW6020B | ZINC | 143 | mg/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW7471B | MERCURY | 0.137 | mg/kg | | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 31.9 | ug/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 49.7 | ug/kg | D | | | ✓ |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 30.1 | ug/kg | D | J | CF | |
| SIB-SC-D36-2-3-07082022 | 22G0178-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW6020B | ARSENIC | 3.56 | mg/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW6020B | COPPER | 31.5 | mg/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW6020B | LEAD | 31.5 | mg/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW7471B | MERCURY | 0.0764 | mg/kg | | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.8 | ug/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 41.9 | ug/kg | D | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 22.2 | ug/kg | D | J | FDPA | |
| SIB-SC-D36-3-4-07/08/2022 | 22G0178-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| FD-05-07/08/2022 | 22G0178-15 | SW6020B | ARSENIC | 3.83 | mg/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW6020B | CADMIUM | 0.24 | mg/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW6020B | COPPER | 31.9 | mg/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW6020B | LEAD | 32.4 | mg/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW6020B | ZINC | 142 | mg/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW7471B | MERCURY | 0.0787 | mg/kg | | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.6 | ug/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 70.6 | ug/kg | D | | | ✓ |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 105 | ug/kg | D | J | FDPA | |
| FD-05-07/08/2022 | 22G0178-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW6020B | ARSENIC | 5.53 | mg/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW6020B | COPPER | 50.9 | mg/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW6020B | LEAD | 38.7 | mg/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW6020B | ZINC | 176 | mg/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW7471B | MERCURY | 0.146 | mg/kg | | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 24.7 | ug/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 47.7 | ug/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 32.3 | ug/kg | D | | | ✓ |
| SIB-SC-D36-4-5-07082022 | 22G0178-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW6020B | ARSENIC | 6.26 | mg/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW6020B | COPPER | 55.4 | mg/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW6020B | LEAD | 42.7 | mg/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW6020B | ZINC | 183 | mg/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW7471B | MERCURY | 0.121 | mg/kg | | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | Aroclor 1262 | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 29.3 | ug/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 52.4 | ug/kg | D | | | ✓ |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 47 | ug/kg | D | J | IRL | |
| SIB-SC-D36-5-6-07082022 | 22G0178-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D36-1-2-07082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 3.6 | pg/g | | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 5 | pg/g | | | | ✓ |
| SIB-SC-D36-4-5-07082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 7.2 | pg/g | | | | ✓ |
| SIB-SC-D36-2-3-07082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 7.4 | pg/g | | | | ✓ |
| SIB-SC-D36-5-6-07082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 21.1 | pg/g | | | | ✓ |
| SIB-SC-E36-5-6-07082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT | 14.2 | pg/g | | | | ✓ |
| SIB-SC-D36-1-2-07082022 | Calc | CALC | SUM OF AROCLORS | 119 | ug/kg | | | | ✓ |
| SIB-SC-D36-3-4-07/08/2022 | Calc | CALC | SUM OF AROCLORS | 110 | ug/kg | | | | ✓ |
| SIB-SC-D36-4-5-07082022 | Calc | CALC | SUM OF AROCLORS | 123 | ug/kg | | | | ✓ |
| SIB-SC-D36-2-3-07082022 | Calc | CALC | SUM OF AROCLORS | 130 | ug/kg | | | | ✓ |
| SIB-SC-D36-5-6-07082022 | Calc | CALC | SUM OF AROCLORS | 147 | ug/kg | | | | ✓ |
| SIB-SC-E36-5-6-07082022 | Calc | CALC | SUM OF AROCLORS | 217 | ug/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 4 |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0178 |
| HGL Reviewer | Ken Rapuano 8/8/2023 |
| HGL QC Review | Justin Hersh 8/18/2023 |

General issues: The laboratory hardcopy reports use the DoD qualification conventions and report ND results as <#, where # is the LOD. The HGL reviewer confirmed that the EDD reports the MDL in the reporting_detection_field in accordance with the project data reporting conventions.

The DV report indicated that the associated rinse blank EB01-07/12/2022 was free from all contamination; however, this rinse blank was contaminated with 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

PCBs as Aroclors – 8082A

Internal Standards: Samples FD-05-07/08/2022 and SIB-SC-D36-4-5-07/08/2022 had a low area for IS HBBP on column 2; no associated compounds were reported using column 2 for quantitation and no additional qualification is required.

Confirmation: The DV report evaluation includes a copy and paste error; the second listed sample affected by confirmation discrepancy is SIB-SC-D36-2-3-07/08/2022.

Metals – 6020B and 7471B

Initial Calibration: The ICal for Zn-67 (8.1.22) had a COD <0.998; this isotope was not used to quantify any reported zinc results and no qualification is required.

High-Level Calibration Standard: Two high-level standards had %D >10% for lead-208; all lead results are below or near the CCV standard concentrations and in the judgment of the HGL reviewer, no additional qualification is required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0179

July 31, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0179 | SIB-SC-F32-1-2-07082022 | 22G0179-06 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F32-2-3-07082022 | 22G0179-07 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F32-3-4-07082022 | 22G0179-08 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F32-4-5-07082022 | 22G0179-09 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F32-5-6-07082022 | 22G0179-10 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F31-1-2-07082022 | 22G0179-17 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F31-2-3-07082022 | 22G0179-18 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F31-3-4-07082022 | 22G0179-19 | SE | ✓ | ✓ | ✓ |
| 22G0179 | SIB-SC-F31-4-5-07082022 | 22G0179-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0179 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

With the noted exception, the laboratory submitted all required deliverables for a compliance level review.

For Sample SIB-SC-F32-5-6-07082022, the full data package PDF was missing the summary form for the 1x analysis. The laboratory submitted revised PDF summary forms.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

For all samples, the date suffix in the sample ID is expressed as DDMMYYYY instead of DD/MM/YYYY in the "sample_name" field. All sample IDs in the "sys_sample_code" field match the chain-of-custody (COC).

For Sample SIB-SC-F32-5-6-07/08/2022, the results for Aroclors 1248, 1254, and 1260 from the 1x analysis were not in the EDD. The lab submitted a revised EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. EB01-07122022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

For Sample SIB-SC-F32-2-3-07/08/2022, the percent recovery (%R) value of decachlorobiphenyl (DCBP) was above the control limit, indicating a potential high bias. The positive results for Aroclors were estimated (J-SSH).

Field Duplicates

No field duplicates were submitted.

Reported Results

For Sample SIB-SC-F32-5-6-07/08/2022, the results for Aroclors 1248, 1254, and 1260 were reported from a 5x analysis and a 1x analysis. The results from the 1x analysis should be used. The results from the 5x were qualified as do-not-report (DNR-EXC).

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exception, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample and duplicate, matrix spike/matrix spike suppicate (MS/MSD), and SRM recoveries. Precision was acceptable based on the MS/MSD and LCS/LCSD RPD values.

Data were qualified for surrogate outliers.

Data were qualified as do-not-report (DNR) to indicate which result of multiple results should be used.

Data that were qualified as DNR should not be used for any reason. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0179 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. EB01-07122022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0149, matrix spike/matrix spike duplicates (MS/MSD) were analyzed using Sample SIB-SC-F31-4-5-07/08/2022. The relative percent difference (RPD) value for lead was above 20%. All samples in this batch had detected lead results and were estimated (J-MSP).

No MS/MSD were performed for the mercury analyses. Accuracy was evaluated from the laboratory control sample and precision was not evaluated.

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0149, SIB-SC-F31-4-5-07/08/2022 was used for the lab duplicate. The RPD value for lead was greater than the control limit; results for lead in this batch were estimated (J-LDPR).

No laboratory duplicate was performed for the mercury analyses. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on a MS/MSD precision outlier and a laboratory duplicate precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW6020B | ARSENIC | 6.2 | mg/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW6020B | COPPER | 72.6 | mg/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW6020B | LEAD | 64.5 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW6020B | ZINC | 264 | mg/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW7471B | MERCURY | 0.376 | mg/kg | | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | 64.7 | ug/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | 121 | ug/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-F32-1-2-07082022 | 22G0179-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW6020B | ARSENIC | 6.82 | mg/kg | D | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW6020B | CADMIUM | 0.72 | mg/kg | D | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW6020B | COPPER | 87.3 | mg/kg | D | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW6020B | LEAD | 142 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW6020B | ZINC | 315 | mg/kg | D | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW7471B | MERCURY | 0.385 | mg/kg | | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1248 (AROCOLOR 1248) | 174 | ug/kg | D | J | SSH | |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1254 (AROCOLOR 1254) | 399 | ug/kg | D | J | SSH | |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1260 (AROCOLOR 1260) | 288 | ug/kg | D | J | SSH | |
| SIB-SC-F32-2-3-07082022 | 22G0179-07 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW6020B | ARSENIC | 3.33 | mg/kg | D | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW6020B | COPPER | 39.1 | mg/kg | D | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW6020B | LEAD | 39.7 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW6020B | ZINC | 92.8 | mg/kg | D | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW7471B | MERCURY | 0.122 | mg/kg | | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1248 (AROCOLOR 1248) | 16.9 | ug/kg | D J | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1254 (AROCOLOR 1254) | 32 | ug/kg | D | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1260 (AROCOLOR 1260) | 38.7 | ug/kg | D | | | ✓ |
| SIB-SC-F32-3-4-07082022 | 22G0179-08 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW6020B | ARSENIC | 3.15 | mg/kg | D | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW6020B | COPPER | 32.9 | mg/kg | D | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW6020B | LEAD | 5.73 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW6020B | ZINC | 65.3 | mg/kg | D | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW7471B | MERCURY | 0.0375 | mg/kg | | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1248 (AROCOLOR 1248) | 4.8 | ug/kg | | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1254 (AROCOLOR 1254) | 8.7 | ug/kg | | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1260 (AROCOLOR 1260) | 3.8 | ug/kg | J | | | ✓ |
| SIB-SC-F32-4-5-07082022 | 22G0179-09 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW6020B | ARSENIC | 2.68 | mg/kg | D | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW6020B | COPPER | 27.4 | mg/kg | D | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW6020B | LEAD | 4.34 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW6020B | ZINC | 62.4 | mg/kg | D | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW7471B | MERCURY | 0.0252 | mg/kg | J | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F32-5-6-07082022 | 22G0179-10 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW6020B | ARSENIC | 6.54 | mg/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW6020B | COPPER | 106 | mg/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW6020B | LEAD | 70 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW6020B | ZINC | 250 | mg/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW7471B | MERCURY | 0.582 | mg/kg | | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1248 (AROCOLOR 1248) | 59.5 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1254 (AROCOLOR 1254) | 121 | ug/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1260 (AROCOLOR 1260) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-F31-1-2-07082022 | 22G0179-17 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW6020B | ARSENIC | 6 | mg/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW6020B | COPPER | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW6020B | LEAD | 58.1 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW7471B | MERCURY | 0.355 | mg/kg | | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | 53 | ug/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1254 (AROCOLOR 1254) | 92.3 | ug/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1260 (AROCOLOR 1260) | 90.5 | ug/kg | D | | | ✓ |
| SIB-SC-F31-2-3-07082022 | 22G0179-18 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW6020B | ARSENIC | 4.86 | mg/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW6020B | COPPER | 55.1 | mg/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW6020B | LEAD | 95 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW6020B | ZINC | 246 | mg/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW7471B | MERCURY | 0.47 | mg/kg | | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1248 (AROCOLOR 1248) | 79.4 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1254 (AROCOLOR 1254) | 191 | ug/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1260 (AROCOLOR 1260) | 144 | ug/kg | D | | | ✓ |
| SIB-SC-F31-3-4-07082022 | 22G0179-19 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW6020B | ARSENIC | 5.45 | mg/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW6020B | COPPER | 53 | mg/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW6020B | LEAD | 51.3 | mg/kg | D | J | MSP,LDPR | |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW6020B | ZINC | 189 | mg/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW7471B | MERCURY | 0.423 | mg/kg | | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1248 (AROCOLOR 1248) | 30.5 | ug/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1254 (AROCOLOR 1254) | 69.4 | ug/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1260 (AROCOLOR 1260) | 49.8 | ug/kg | D | | | ✓ |
| SIB-SC-F31-4-5-07082022 | 22G0179-20 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0179 |
| HGL Reviewer | Ken Rapuano 8/8/2023 |
| HGL QC Review | Justin Hersh 8/18/2023 |

General issues: The laboratory hardcopy reports use the DoD qualification conventions and report ND results as <#, where # is the LOD. The HGL reviewer confirmed that the EDD reports the MDL in the reporting_detection_field in accordance with the project data reporting conventions.

The DV report indicated that the associated rinse blank EB01-07/12/2022 was free from all contamination; however, this rinse blank was contaminated with 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB showed no recovery on column 2 for samples SIB-SC-F32-1-2-07/08/2022 and SIB-SC-F32-2-3-07/08/2022. All results were reported from column 1 for sample SIB-SC-F32-1-2-07/08/2022, which had all surrogate %Rs in control and the HGL reviewer concurs with the validator decision not to apply qualification. Sample SIB-SC-F32-2-3-07/08/2022 also had a high %R for surrogate DCB on column 1, although by less than 20%. The validator applied J-SSH to the detected results reported from column 2 for sample SIB-SC-F32-2-3-07/08/2022 and did not qualify the non-detected results reported from column 1; the HGL reviewer concurs with these qualification decisions.

Reported Results: The validators applied DNR-EXC to three Aroclors reported from the 5x dilution of sample SIB-SC-F32-5-6-07/08/2022; the HGL reviewer changed the reportable_result field from Yes to No for these three results.

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0180

January 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez".

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0180 | SIB-SC-F31-5-6-07082022 | 22G0180-01 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SE | ✓ | ✓ | ✓ |
| 22G0180 | FD-06-07/09/2022 | 22G0180-10 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E31-2-3-07092022 | 22G0180-11 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E31-3-4-07092022 | 22G0180-12 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E31-4-5-07092022 | 22G0180-13 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E31-5-6-07092022 | 22G0180-14 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E32-1-2-07092022 | 22G0180-15 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E32-2-3-07092022 | 22G0180-16 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E32-3-4-07092022 | 22G0180-17 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E32-4-5-07092022 | 22G0180-18 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-E32-5-6-07092022 | 22G0180-19 | SE | ✓ | ✓ | ✓ |
| 22G0180 | SIB-SC-D30-1-2-07092022 | 22G0180-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 20G0180 | 13 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Two sets of MS/MSDs were analyzed by the laboratory. For the MS/MSD using Sample SIB-SC-E31-2-3-07/09/2022, the %R values of AR1260 were less than the lower control limit, indicate a potential

low bias. The results for AR1248, AR1254, AR1260, and AR1268 in the parent sample were estimated (J/UJ-MSL).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Samples SIB-SC-3-4-07/09/2022 and SIB-SC-E32-1-2-07/09/2022, the %R values for DCBP were greater than the upper the control limit on column 1, indicating a potential high bias. The %R values for DCBP on column 2 were not reported due to chromatographic interferences. Positive results in these samples were estimated (J-SSH).

For several samples, the DCBP %R values were not reported from column 2 due to chromatographic interferences. The %R values for both surrogates were acceptable on column 1, and results were reported from column 1; therefore, no qualifiers were applied.

Field Duplicates

Samples SIB-SC-E31-1-2-07/09/2022 & FD-06-07/09/2022 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

The laboratory reporting limits were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, laboratory control samples, SRM, and matrix spike/matrix spike suplicate (MS/MSD) recoveries. Precision was acceptable based on the MS/MSD and field duplicate RPD values.

Results were estimated based on surrogate and MS/MSD accuracy outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0180 | 13 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

For Batch BKH0786, two matrix spike/matrix spike duplicates (MS/MSD) were analyzed using Samples SIB-SC-E31-2-3-07092022 and SIB-SC-E32-5-6-07092022. The recoveries for mercury were less than the lower control limit in the MS sample and much less than the lower control limit in the MSD sample and the relative percent difference (RPD) was above 20% for SIB-SC-E31-2-3-07092022. All samples in this batch had detected mercury results and were estimated (J-MSL, MSLX, MSP).

For SIB-SC-E32-5-6-07092022 the percent recovery for mercury was less than the control limit in the MSD. The MS recovery was acceptable; no data were qualified based on the single outlier. The RPD was above 20% and all samples in this batch were estimated (J-MSP).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0786, SIB-SC-E31-2-3-07092022 and SIB-SC-E32-5-6-07092022 were used for the lab duplicates. For Sample SIB-SC-E31-2-3-07092022, the RPD value for mercury was greater than the control limit; results for mercury in this batch were estimated (J-LPDR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

FD-06-07/09/2022 & SIB-SC-E31-1-2-07092022

All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as laboratory duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW6020B | ARSENIC | 5.46 | mg/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW6020B | COPPER | 53.7 | mg/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW6020B | LEAD | 30.5 | mg/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW6020B | ZINC | 185 | mg/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW7471B | MERCURY | 0.345 | mg/kg | B | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.2 | ug/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 74.5 | ug/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 50.7 | ug/kg | D | | | ✓ |
| SIB-SC-F31-5-6-07082022 | 22G0180-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW6020B | ARSENIC | 7.17 | mg/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW6020B | COPPER | 81.2 | mg/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW6020B | LEAD | 49.9 | mg/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW6020B | ZINC | 286 | mg/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW7471B | MERCURY | 0.276 | mg/kg | B | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 42.9 | ug/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 79.5 | ug/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 79.8 | ug/kg | D | | | ✓ |
| SIB-SC-E31-1-2-07/09/2022 | 22G0180-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW6020B | ARSENIC | 6.69 | mg/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW6020B | COPPER | 83.8 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|---------------------|---------------------------------|
| FD-06-07/09/2022 | 22G0180-10 | SW6020B | LEAD | 49.2 | mg/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW6020B | ZINC | 256 | mg/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW7471B | MERCURY | 0.189 | mg/kg | B | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.7 | ug/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 73.7 | ug/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 75.8 | ug/kg | D | | | ✓ |
| FD-06-07/09/2022 | 22G0180-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW6020B | ARSENIC | 6.89 | mg/kg | D | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW6020B | COPPER | 75.2 | mg/kg | D | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW6020B | LEAD | 49.9 | mg/kg | D | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW6020B | ZINC | 296 | mg/kg | D | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW7471B | MERCURY | 0.401 | mg/kg | | J | LPDR, MSL,MSLX, MSP | |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | MSL | |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 83.7 | ug/kg | D | J | MSL | |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 146 | ug/kg | D | J | MSL | |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 170 | ug/kg | D | J | MSL | |
| SIB-SC-E31-2-3-07092022 | 22G0180-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | MSL | |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW6020B | ARSENIC | 6.43 | mg/kg | D | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW6020B | COPPER | 63.6 | mg/kg | D | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW6020B | LEAD | 44.5 | mg/kg | D | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW6020B | ZINC | 265 | mg/kg | D | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW7471B | MERCURY | 0.297 | mg/kg | B | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 67.3 | ug/kg | D | J | SSH | |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 121 | ug/kg | D | J | SSH | |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 120 | ug/kg | D | J | SSH | |
| SIB-SC-E31-3-4-07092022 | 22G0180-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW6020B | ARSENIC | 6.19 | mg/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW6020B | COPPER | 62 | mg/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW6020B | LEAD | 41.5 | mg/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW6020B | ZINC | 223 | mg/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW7471B | MERCURY | 0.189 | mg/kg | B | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 49 | ug/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.7 | ug/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-E31-4-5-07092022 | 22G0180-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW6020B | ARSENIC | 5.85 | mg/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW6020B | COPPER | 56.4 | mg/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW6020B | LEAD | 37.7 | mg/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW6020B | ZINC | 239 | mg/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW7471B | MERCURY | 0.0971 | mg/kg | B | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.6 | ug/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 93.8 | ug/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 82.7 | ug/kg | D | | | ✓ |
| SIB-SC-E31-5-6-07092022 | 22G0180-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW6020B | ARSENIC | 7.26 | mg/kg | D | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW6020B | COPPER | 81.6 | mg/kg | D | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW6020B | LEAD | 54.9 | mg/kg | D | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW6020B | ZINC | 274 | mg/kg | D | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW7471B | MERCURY | 0.482 | mg/kg | B | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 59.1 | ug/kg | D | J | SSH | |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 118 | ug/kg | D | J | SSH | |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 188 | ug/kg | D | J | SSH | |
| SIB-SC-E32-1-2-07092022 | 22G0180-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW6020B | ARSENIC | 6.98 | mg/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW6020B | COPPER | 87.5 | mg/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW6020B | LEAD | 64.1 | mg/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW6020B | ZINC | 262 | mg/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW7471B | MERCURY | 0.155 | mg/kg | B | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 68.1 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 134 | ug/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 134 | ug/kg | D | | | ✓ |
| SIB-SC-E32-2-3-07092022 | 22G0180-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW6020B | ARSENIC | 5.59 | mg/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW6020B | COPPER | 71.3 | mg/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW6020B | LEAD | 64.6 | mg/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW6020B | ZINC | 217 | mg/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW7471B | MERCURY | 0.235 | mg/kg | B | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 94.2 | ug/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 163 | ug/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 145 | ug/kg | D | | | ✓ |
| SIB-SC-E32-3-4-07092022 | 22G0180-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW6020B | ARSENIC | 6.09 | mg/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW6020B | COPPER | 58.1 | mg/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW6020B | LEAD | 41.9 | mg/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW6020B | ZINC | 247 | mg/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW7471B | MERCURY | 0.232 | mg/kg | B | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.2 | ug/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 79.2 | ug/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 73.9 | ug/kg | D | | | ✓ |
| SIB-SC-E32-4-5-07092022 | 22G0180-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|---------------------|---------------------------------|
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW6020B | ARSENIC | 5.13 | mg/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW6020B | COPPER | 55.3 | mg/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW6020B | LEAD | 43.7 | mg/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW7471B | MERCURY | 0.155 | mg/kg | | J | LPDR, MSL,MSLX, MSP | |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 47.1 | ug/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 95.3 | ug/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 91.2 | ug/kg | D | | | ✓ |
| SIB-SC-E32-5-6-07092022 | 22G0180-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW6020B | ARSENIC | 7.27 | mg/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW6020B | COPPER | 75.8 | mg/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW6020B | LEAD | 50.7 | mg/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW6020B | ZINC | 261 | mg/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW7471B | MERCURY | 0.142 | mg/kg | B | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 48 | ug/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 87.5 | ug/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 81.2 | ug/kg | D | | | ✓ |
| SIB-SC-D30-1-2-07092022 | 22G0180-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0180 |
| HGL Reviewer | Ken Rapuano 6/28/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07122022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

Holding Time: The mercury results are reported from extracts prepared 51 to 53 days from sampling; the laboratory PM confirmed that the samples were prepared on archived material stored frozen in accordance with the QAPP. No qualification required.

Method Blank: The DV report did not note that the mercury method blank for batch BKH0719 was contaminated with 0.0072 mg/kg mercury, leading to a qualification threshold of 0.036 mg/kg. All associated mercury results are greater than this qualification threshold and no additional qualification is required.



REVISED DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0183

January 17, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This revised report reflects updates to reason codes from "VJ" to "EXC" (validator judgment, to result excluded; another data point for this analyte was selected for use).

This report summarizes the results of full review (EPA Stage 4) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0183 | SIB-SC-D30-2-3-07092022 | 22G0183-01 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D30-3-4-07092022 | 22G0183-02 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D30-4-5-07092022 | 22G0183-03 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D30-5-6-07092022 | 22G0183-04 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D31-1-2-07092022 | 22G0183-05 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D31-2-3-07092022 | 22G0183-06 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D31-3-4-07092022 | 22G0183-07 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D31-4-5-07092022 | 22G0183-08 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-D31-5-6-07092022 | 22G0183-09 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C30-1-2-07092022 | 22G0183-10 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C30-2-3-07092022 | 22G0183-11 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C30-3-4-07092022 | 22G0183-12 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C30-4-5-07092022 | 22G0183-13 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C30-5-6-07092022 | 22G0183-14 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-0-1-07092022 | 22G0183-15 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-1-2-07092022 | 22G0183-16 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-2-3-07092022 | 22G0183-17 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-3-4-07092022 | 22G0183-18 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-4-5-07092022 | 22G0183-19 | SE | ✓ | ✓ | ✓ |
| 22G0183 | SIB-SC-C28-5-6-07092022 | 22G0183-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0183 | 20 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The case narrative documents outliers for an initial calibration verification (ICV) standard that was not associated with samples in this SDG. No action was taken.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100%) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10%). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|-----------------------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Internal Standards |
| ✓ | Initial Calibration (ICAL) | 1 | Field Duplicates |
| 2 | Continuing Calibration (CCAL) | 1 | Standard Reference Material (SRM) |
| ✓ | Laboratory Blanks | ✓ | Target Analyte List |
| 1 | Field Blanks | 1 | Reporting Limits |
| 1 | Surrogate Compounds | ✓ | Compound Identification |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Calculation Verification |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Continuing Calibration (CCAL)

Continuing calibration standards (CCAL) were analyzed at the required frequency. With the noted exceptions, all percent difference (%D) values were within the $\pm 20\%$ control limit.

For the CCAL analyzed on 7/29/22 at 08:31, the %D values for AR1260 and surrogate decachlorobiphenyl (DCBP) on column 1 were outside the control limit, indicating a potential low bias. The positive result for AR1260 in Sample SIB-SC-D31-1-2-07/09/2022 was estimated (J-CCVD). The AR1260 results for all other associated samples were reported from column 2; no qualifiers were required. No qualifiers are assigned to surrogate compounds.

For the CCALs analyzed on 8/3/2022, there were %D outliers for AR1254 and AR1260. The results for the associated sample, Sample SIB-SC-D31-1-2-07/09/2022 (10x), were qualified as do-not-report (DNR-EXC). No qualifiers for CCAL outliers were required.

Field Blanks

No field blanks were submitted.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Sample SIB-SC-E29-3-4-07102022, the %R value for DCBP was not reported due to matrix interference on column 2. Results for this sample were reported from column 1. No qualifiers were required.

Internal Standards

Internal standards (IS) were added to all samples and laboratory QC samples. With the noted exception, all internal standard areas were within 50 – 200% of the associated continuing calibration standard.

For Sample SIB-SC-C30-3-4-07/09/2022, the area for hexabromobiphenyl was less than the control limit, indicating a potential low bias. This internal standard is used to quantitate AR1260, AR1262, and AR1268; therefore, results for these Aroclors were estimated (J/UJ-IRL).

Field Duplicates

No field duplicates were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Reporting Limits

Samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

Reported Results

The laboratory analyzed Sample SIB-SC-D31-1-2-07/09/2022 at a 5x and 10x dilution due to the sample matrix. Results for both analyses were reported. The results from the 10x dilution were qualified as do-not-report (DNR-EXC) to indicate which of the two results should not be used.

Calculation Verification

Calculation verifications were performed for this SDG. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD percent recovery values. Precision was also acceptable as demonstrated by the field duplicate, LCS/LCSD and MS/MSD relative percent difference values.

Results were estimated due to a CCAL and internal standard accuracy outliers.

Results were qualified as do-not-report (DNR). These results should not be used.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES AND MATRIX | VALIDATION LEVEL |
|---------|------------------------------|------------------|
| 22G0183 | 20 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The method 6020B raw data were inadvertently redacted in the PDF. Highlighting showed up as opaque, but the underlying data could still be accessed. The laboratory was contacted and will submit a revised report to the client.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the hardcopy laboratory data package. Laboratory QC results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

| | | | |
|---|---|---|----------------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | ICP-MS Tune | ✓ | ICP-MS Internal standards |
| ✓ | Initial Calibration | ✓ | Interference Check Samples |
| ✓ | Calibration Verification | ✓ | Serial Dilutions |
| ✓ | CRDL Standards | 1 | Field Duplicates |
| ✓ | Laboratory Blanks | ✓ | Reporting Limits |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Calculation Verification |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted with this SDG.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ- MSL). For %R values less than 30%, indicating an extreme low bias, associated results are estimated (J/UJ- MSLX). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For the mercury analyses, Sample SIB-SC-D30-3-4-07/09/2022 was analyzed as the matrix spike. The mercury recovery in the MS sample was extremely low and the associated MSD sample recovery was greater than the upper control limit. The RPD value for mercury was greater than the control limit. A post digestion spike (PDS) was performed; however, the spike concentration was much less than the parent sample concentration and could not be evaluated for accuracy. All associated sample results were estimated (J-MSLX, MSH, MSP, PDN).

Field Duplicates

No field duplicates were submitted.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and MS/MSD %R values and precision was acceptable as demonstrated by the MS/MSD and laboratory duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW6020B | ARSENIC | 6.84 | mg/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW6020B | COPPER | 78.9 | mg/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW6020B | LEAD | 70.2 | mg/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW6020B | ZINC | 238 | mg/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW7471B | MERCURY | 0.241 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 58.1 | ug/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-D30-2-3-07092022 | 22G0183-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW6020B | ARSENIC | 6.84 | mg/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW6020B | COPPER | 66.6 | mg/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW6020B | LEAD | 43.8 | mg/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW6020B | ZINC | 252 | mg/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW7471B | MERCURY | 0.265 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 68.2 | ug/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 120 | ug/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-D30-3-4-07092022 | 22G0183-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW6020B | ARSENIC | 5.98 | mg/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|------------------|------------------------------------|
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW6020B | COPPER | 56.1 | mg/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW6020B | LEAD | 37.4 | mg/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW6020B | ZINC | 211 | mg/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW7471B | MERCURY | 0.182 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 67.2 | ug/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-D30-4-5-07092022 | 22G0183-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW6020B | ARSENIC | 5.38 | mg/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW6020B | COPPER | 51.8 | mg/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW6020B | LEAD | 34.4 | mg/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW6020B | ZINC | 236 | mg/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW7471B | MERCURY | 0.168 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 59.2 | ug/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 98.1 | ug/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 108 | ug/kg | D | | | ✓ |
| SIB-SC-D30-5-6-07092022 | 22G0183-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW6020B | ARSENIC | 6.62 | mg/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW6020B | COPPER | 69 | mg/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW6020B | LEAD | 49.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|------------------|------------------------------------|
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW6020B | ZINC | 239 | mg/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW7471B | MERCURY | 0.219 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 43.2 | ug/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 80.2 | ug/kg | D | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 75.7 | ug/kg | D | J | CCVD | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.8 | ug/kg | D | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 135 | ug/kg | D | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 63.8 | ug/kg | D | DNR | EXC | |
| SIB-SC-D31-1-2-07092022 | 22G0183-05RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW6020B | ARSENIC | 6.99 | mg/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW6020B | COPPER | 104 | mg/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW6020B | LEAD | 65 | mg/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW6020B | ZINC | 283 | mg/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW7471B | MERCURY | 0.469 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 86.7 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 173 | ug/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 259 | ug/kg | D | | | ✓ |
| SIB-SC-D31-2-3-07092022 | 22G0183-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW6020B | ARSENIC | 6.25 | mg/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW6020B | COPPER | 61.4 | mg/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW6020B | LEAD | 42 | mg/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW6020B | ZINC | 235 | mg/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW7471B | MERCURY | 0.261 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 68.3 | ug/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 122 | ug/kg | D | | | ✓ |
| SIB-SC-D31-3-4-07092022 | 22G0183-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW6020B | ARSENIC | 5.74 | mg/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW6020B | COPPER | 55.8 | mg/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW6020B | LEAD | 35.6 | mg/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW7471B | MERCURY | 0.18 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.5 | ug/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 99.9 | ug/kg | D | | | ✓ |
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 99 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D31-4-5-07092022 | 22G0183-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW6020B | ARSENIC | 5.68 | mg/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW6020B | COPPER | 54 | mg/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW6020B | LEAD | 34.8 | mg/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW7471B | MERCURY | 0.177 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 64.3 | ug/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 102 | ug/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 98.1 | ug/kg | D | | | ✓ |
| SIB-SC-D31-5-6-07092022 | 22G0183-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW6020B | ARSENIC | 6.16 | mg/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW6020B | COPPER | 55.9 | mg/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW6020B | LEAD | 43 | mg/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW6020B | ZINC | 246 | mg/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW7471B | MERCURY | 0.204 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.8 | ug/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 76.1 | ug/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 68.7 | ug/kg | D | | | ✓ |
| SIB-SC-C30-1-2-07092022 | 22G0183-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW6020B | ARSENIC | 6.18 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW6020B | COPPER | 61.5 | mg/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW6020B | LEAD | 49 | mg/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW6020B | ZINC | 228 | mg/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW7471B | MERCURY | 0.508 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 37.2 | ug/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 67.2 | ug/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 65.9 | ug/kg | D | | | ✓ |
| SIB-SC-C30-2-3-07092022 | 22G0183-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW6020B | ARSENIC | 7.07 | mg/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW6020B | COPPER | 81.3 | mg/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW6020B | LEAD | 61 | mg/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW6020B | ZINC | 237 | mg/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW7471B | MERCURY | 0.265 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 192 | ug/kg | D | | | ✓ |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 184 | ug/kg | D | J | IRL | |
| SIB-SC-C30-3-4-07092022 | 22G0183-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW6020B | ARSENIC | 7 | mg/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW6020B | COPPER | 71.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW6020B | LEAD | 51.1 | mg/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW6020B | ZINC | 258 | mg/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW7471B | MERCURY | 0.33 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 74.8 | ug/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 175 | ug/kg | D | | | ✓ |
| SIB-SC-C30-4-5-07092022 | 22G0183-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW6020B | ARSENIC | 4.74 | mg/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW6020B | CADMIUM | 0.29 | mg/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW6020B | COPPER | 45.2 | mg/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW6020B | LEAD | 35 | mg/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW6020B | ZINC | 193 | mg/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW7471B | MERCURY | 0.183 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 61 | ug/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 100 | ug/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 92.8 | ug/kg | D | | | ✓ |
| SIB-SC-C30-5-6-07092022 | 22G0183-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW6020B | ARSENIC | 6.57 | mg/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW6020B | COPPER | 65.3 | mg/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW6020B | LEAD | 41.6 | mg/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW6020B | ZINC | 207 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW7471B | MERCURY | 0.219 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.7 | ug/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 91.8 | ug/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 84.6 | ug/kg | D | | | ✓ |
| SIB-SC-C28-0-1-07092022 | 22G0183-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW6020B | ARSENIC | 6.44 | mg/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW6020B | COPPER | 57.7 | mg/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW6020B | LEAD | 45.6 | mg/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW6020B | ZINC | 243 | mg/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW7471B | MERCURY | 0.26 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 65.6 | ug/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-C28-1-2-07092022 | 22G0183-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW6020B | ARSENIC | 5.73 | mg/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW6020B | COPPER | 51.5 | mg/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW6020B | LEAD | 39.3 | mg/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW6020B | ZINC | 231 | mg/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW7471B | MERCURY | 0.117 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 62.5 | ug/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 109 | ug/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 120 | ug/kg | D | | | ✓ |
| SIB-SC-C28-2-3-07092022 | 22G0183-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW6020B | ARSENIC | 6.79 | mg/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW6020B | COPPER | 63.9 | mg/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW6020B | LEAD | 49 | mg/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW6020B | ZINC | 267 | mg/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW7471B | MERCURY | 0.283 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 70.1 | ug/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-C28-3-4-07092022 | 22G0183-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW6020B | ARSENIC | 5.81 | mg/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW6020B | COPPER | 55.9 | mg/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW6020B | LEAD | 38.2 | mg/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW6020B | ZINC | 190 | mg/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW7471B | MERCURY | 0.162 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|------------------|------------------------------------|
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 54.8 | ug/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-C28-4-5-07092022 | 22G0183-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW6020B | ARSENIC | 5.89 | mg/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW6020B | COPPER | 55.8 | mg/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW6020B | LEAD | 41.3 | mg/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW6020B | ZINC | 251 | mg/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW7471B | MERCURY | 0.157 | mg/kg | | J | MSLX,MSH,MSP,PDN | |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 67.1 | ug/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 120 | ug/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-C28-5-6-07092022 | 22G0183-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 4 |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0183 |
| HGL Reviewer | Ken Rapuano 6/28/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07122022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

Continuing Calibration: The DV report correctly identifies the issue affecting Aroclor 1260 (column 1) in the CCV analyzed on 7.29.22 at 0810; however, discrepancies in Aroclor 1260 also affect Aroclors 1248, 1254, 1262, and 1268. The laboratory performed a separate check for Aroclors 1248 and 1254 in association with the CCV with an Aroclor 1260 discrepancy and in the judgment of the HGL reviewer, results for those Aroclors reported from column 1 do not require qualification. **All Aroclor 1262 and 1268 results reported from column 1 for samples SIB-SC-D30-2-3-07/09/2022, SIB-SC-D30-3-4-07/09/2022, SIB-SC-D30-4-5-07/09/2022, SIB-SC-D30-5-6-07/09/2022, SIB-SC-D31-1-2-07/09/2022, and SIB-SC-D31-2-3-07/09/2022 are non-detections and should be qualified UJ-CCVD.**

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for sample SIB-SC-D31-2-3-07/09/2022; although this was the only one of four surrogate %Rs that were out of control, the %R was above the upper control limit by more than 20% and in accordance with the HGL Consistency Memorandum, **the detected result for Aroclor 1248 reported from column 1 for this sample should be qualified J-SSH; all other detected results for this sample are reported from column 2 and do not require qualification.**

The DV report notes that surrogate DCB was not reported from column 2 for the analysis of sample SIB-SC-E29-3-4-07102022 due to a matrix interference. The DV report incorrectly states that the results for this sample were reported from column 1; the results for Aroclor 1248 and 1254 were reported from column 2. The HGL reviewer examined the raw data and the %R for DCB would be ~66% for column 2; in the judgment of the HGL reviewer, no additional qualification is required.

Reported Results: The validator selected the 5x diluted results for sample SIB-SC-D31-1-2-07/09/2022 as the usable results and qualified the results from the 10x dilution with DNR and reason code EXC. **The “reportable_result” field in the corresponding Excel file should be changed from Yes to No for all DNR results.** The text DV report indicated that the reason code for assigning DNR qualifiers; the correct EXC reason code was applied by the validator in the database file.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---|--------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-D30-2-3-07/09/2022 | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |
| SIB-SC-D30-3-4-07/09/2022 | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |
| SIB-SC-D30-4-5-07/09/2022 | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |
| SIB-SC-D30-5-6-07/09/2022 | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |
| SIB-SC-D31-1-2-07/09/2022 (5x dilution) | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |
| SIB-SC-D31-1-2-07/09/2022 (10x dilution) | All results | varies | DNR | Change “reportable_result” field from “Yes” to “No” | | |
| SIB-SC-D31-2-3-07/09/2022 | Aroclor 1248 | 86.7 | -- | J | J | SSH |
| | Aroclor 1262 | 2.9 | U | UJ | UJ | CCVD |
| | Aroclor 1268 | 2.9 | U | UJ | UJ | CCVD |

Metals – 6020B and 7471B

Holding Time: The mercury results are reported from extracts prepared 50 or 51 days from sampling; the laboratory PM confirmed that the samples were prepared on archived material stored frozen in accordance with the QAPP. No qualification required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0188

January 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez".

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0188 | SIB-SC-B31-3-4-07102022 | 22G0188-01 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-B31-4-5-07102022 | 22G0188-02 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-B31-5-6-07102022 | 22G0188-03 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-F27-1-2-07102022 | 22G0188-04 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-F27-2-3-07102022 | 22G0188-05 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-F27-3-4-07102022 | 22G0188-06 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-F27-4-5-07102022 | 22G0188-07 | SE | ✓ | ✓ | ✓ |
| 22G0188 | SIB-SC-F27-5-6-07102022 | 22G0188-08 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 20G0188 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

No field duplicates were submitted.

Reporting Limits

One sample was analyzed at a dilution due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate, SRM and matrix spike/matrix spike suppicate (MS/MSD) recoveries. Precision was acceptable based on the MS/MSD and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0188 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

For Batch BKH0511, matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed using Sample SIB-SC-B31-3-4-07/10/2022. The MS/MSD recoveries for mercury were greater than the control limit. All samples in this batch had detected mercury results and were estimated (J-MSH).

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD and laboratory duplicate RPD values.

Results were estimated based on MS/MSD accuracy outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW6020B | ARSENIC | 3.54 | mg/kg | D | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW6020B | COPPER | 33.4 | mg/kg | D | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW6020B | LEAD | 4.72 | mg/kg | D | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW6020B | ZINC | 70.6 | mg/kg | D | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01 | SW7471B | MERCURY | 0.0631 | mg/kg | | J | MSH | |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-3-4-07102022 | 22G0188-01RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW6020B | ARSENIC | 3.48 | mg/kg | D | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW6020B | COPPER | 29.4 | mg/kg | D | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW6020B | LEAD | 6.58 | mg/kg | D | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW6020B | ZINC | 69.2 | mg/kg | D | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02 | SW7471B | MERCURY | 0.057 | mg/kg | | J | MSH | |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-4-5-07102022 | 22G0188-02RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW6020B | ARSENIC | 3.57 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW6020B | COPPER | 30.7 | mg/kg | D | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW6020B | LEAD | 4.98 | mg/kg | D | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW6020B | ZINC | 62.4 | mg/kg | D | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03 | SW7471B | MERCURY | 0.0531 | mg/kg | | J | MSH | |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B31-5-6-07102022 | 22G0188-03RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW6020B | ARSENIC | 5.77 | mg/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW6020B | COPPER | 74.6 | mg/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW6020B | LEAD | 69.3 | mg/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW6020B | ZINC | 222 | mg/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04 | SW7471B | MERCURY | 0.372 | mg/kg | | J | MSH | |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.8 | ug/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 177 | ug/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 151 | ug/kg | D | | | ✓ |
| SIB-SC-F27-1-2-07102022 | 22G0188-04RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW6020B | ARSENIC | 3.18 | mg/kg | D | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW6020B | COPPER | 26 | mg/kg | D | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW6020B | LEAD | 6.63 | mg/kg | D | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW6020B | ZINC | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05 | SW7471B | MERCURY | 0.0422 | mg/kg | | J | MSH | |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-2-3-07102022 | 22G0188-05RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW6020B | ARSENIC | 3.03 | mg/kg | D | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW6020B | COPPER | 21.4 | mg/kg | D | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW6020B | LEAD | 3.64 | mg/kg | D | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW6020B | ZINC | 56 | mg/kg | D | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06 | SW7471B | MERCURY | 0.019 | mg/kg | J | J | MSH | |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-3-4-07102022 | 22G0188-06RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW6020B | ARSENIC | 2.99 | mg/kg | D | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW6020B | COPPER | 22.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW6020B | LEAD | 3.57 | mg/kg | D | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW6020B | ZINC | 56.3 | mg/kg | D | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07 | SW7471B | MERCURY | 0.055 | mg/kg | | J | MSH | |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-4-5-07102022 | 22G0188-07RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW6020B | ARSENIC | 3.6 | mg/kg | D | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW6020B | COPPER | 33.3 | mg/kg | D | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW6020B | LEAD | 5.16 | mg/kg | D | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW6020B | ZINC | 65.7 | mg/kg | D | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08 | SW7471B | MERCURY | 0.0311 | mg/kg | J | J | MSH | |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F27-5-6-07102022 | 22G0188-08RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0188 |
| HGL Reviewer | Ken Rapuano 6/28/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07122022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in an alternative format in the hardcopy report; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

No additional issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0257

June 30, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0257 | SIB-SC-D26-1-2-07112022 | 22G0257-01 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D26-2-3-07112022 | 22G0257-02 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D26-3-4-07112022 | 22G0257-03 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D26-4-5-07112022 | 22G0257-04 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D26-5-6-07112022 | 22G0257-05 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SE | ✓ | ✓ | ✓ |
| 22G0257 | FD-09-07/11/2022 | 22G0257-07 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D25-2-3-07112022 | 22G0257-08 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D25-3-4-07112022 | 22G0257-09 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D25-4-5-07112022 | 22G0257-10 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-D25-5-6-07112022 | 22G0257-11 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-0-1-07112022 | 22G0257-12 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SE | ✓ | ✓ | ✓ |
| 22G0257 | FD-10-07/11/2022 | 22G0257-14 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-2-3-07112022 | 22G0257-15 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-3-4-07112022 | 22G0257-16 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-4-5-07112022 | 22G0257-17 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C25-5-6-07112022 | 22G0257-18 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-0-1-07112022 | 22G0257-19 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-1-2-07112022 | 22G0257-20 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-2-3-07112022 | 22G0257-21 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-3-4-07112022 | 22G0257-22 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-4-5-07112022 | 22G0257-23 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-C24-5-6-07112022 | 22G0257-24 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E24-1-2-07122022 | 22G0257-25 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E24-2-3-07122022 | 22G0257-26 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E24-3-4-07122022 | 22G0257-27 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E24-4-5-07122022 | 22G0257-28 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E24-5-6-07122022 | 22G0257-29 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E23-1-2-07122022 | 22G0257-30 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E23-2-3-07122022 | 22G0257-31 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E23-3-4-07122022 | 22G0257-32 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E23-4-5-07122022 | 22G0257-33 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E23-5-6-07122022 | 22G0257-34 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E25-1-2-07122022 | 22G0257-35 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E25-2-3-07122022 | 22G0257-36 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E25-3-4-07122022 | 22G0257-37 | SE | ✓ | ✓ | ✓ |

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0257 | SIB-SC-E25-4-5-07122022 | 22G0257-38 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E25-5-6-07122022 | 22G0257-39 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E30-1-2-07122022 | 22G0257-40 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E30-2-3-07122022 | 22G0257-41 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E30-3-4-07122022 | 22G0257-42 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E30-4-5-07122022 | 22G0257-43 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-E30-5-6-07122022 | 22G0257-44 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F28-1-2-07122022 | 22G0257-45 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F23-1-2-07132022 | 22G0257-47 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F23-2-3-07132022 | 22G0257-48 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F23-3-4-07132022 | 22G0257-49 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F23-4-5-07132022 | 22G0257-50 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F23-5-6-07132022 | 22G0257-51 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F22-1-2-07132022 | 22G0257-52 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SE | ✓ | ✓ | ✓ |
| 22G0257 | FD-11-07/13/2022 | 22G0257-54 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F22-3-4-07132022 | 22G0257-55 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F22-4-5-07132022 | 22G0257-56 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F22-5-6-07132022 | 22G0257-57 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SE | ✓ | ✓ | ✓ |
| 22G0257 | FD-12-07/13/2022 | 22G0257-59 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F21-2-3-07132022 | 22G0257-60 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F21-3-4-07132022 | 22G0257-61 | SE | ✓ | ✓ | ✓ |
| 22G0257 | SIB-SC-F21-4-5-07132022 | 22G0257-62 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0257 | 62 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

For most samples, the date suffix in the sample ID is expressed as DDMMYYYY instead of DD/MM/YYYY in the "sample_name" field. All sample IDs in the "sys_sample_code" field match the chain-of-custody.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

Based on the chain-of-custody (COC) and the laboratory cooler receipt form, there were some discrepancies between sample bottle labels and the information listed on the COC. The information is as follows:

| SAMPLE ID ON COC | SAMPLE ID ON BOTTLE | LOGGED IN AS |
|--|-----------------------------|---|
| SIB-SC-E25-1-2-07/12/2022 collected 13:03 | SIB-SC-E25-1-2-07/12/2022 | SIB-SC-E25-1-2-07/12/2022 22G0257-35 |
| SIB-SC-E25-1-2-07/12/2022 collected 16:33 | SIB-SC-F28-1-2-07/12/2022 | SIB-SC-F28-1-2-07/12/2022 22G0257-45 |
| SIB-SC-E25-2-2.8-07/12/2022 collected 16:36 | SIB-SC-F28-2-2.8-07/12/2022 | SIB-SC-F28-2-2.8-07/12/2022 22G0257-46 |

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 and EB02-07132022 are associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. All equipment blanks were free from contamination.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken if the concentration in the parent sample is greater than 4x the spike concentration. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample.

The following five samples were used for the MS/MSD analyses:

- SIB-SC-D25-2-3-07/11/2022
- SIB-SC-C25-0-1-07/11/2022
- SIB-SC-C24-2-3-07/11/2022
- SIB-SC-F22-3-4-07/13/2022
- SIB-SC-F21-2-3-07/13/2022

The following outliers were noted:

| PARENT SAMPLE | ANALYTE | MS %R | MSD %R | RPD | QUALIFIER |
|---------------------------|---------|-------|--------|-----|-----------|
| SIB-SC-D25-2-3-07/11/2022 | AR1260 | 28.9 | -- | -- | J-MSL |
| SIB-SC-C25-0-1-07/11/2022 | AR1260 | -- | 56.8 | -- | J-MSL |

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For several samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

For Sample SIB-SC-D25-2-3-07/11/2022, the %R values for DCBP were greater than the upper control limit on both columns. Positive results were qualified (J-SSH).

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Four sets of field duplicates were submitted. Field precision was acceptable:

- FD-09-07/11/2022 & SIB-SC-D25-1-2-7/11/2022
- FD-10-07/11/2022 & SIB-SC-C25-1-2-07/11/2022
- FD-11-07/13/2022 & SIB-SC-F22-2-3-07/13/2022
- FD-12-07/13/2022 & SIB-SC-F21-1-2-07/13/2022

Reported Results

All samples were initially analyzed at a 5x dilution. Samples that were non-detect for all Aroclors at 5x were re-analyzed at 1x. For the samples that were re-analyzed, all results from the 5x should not be used and were qualified as do-not-report (DNR-EXC).

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD and SRM recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Results were qualified due to a matrix spike and surrogate outliers. Other results were qualified as do-not-report to indicate which result of multiple results should be used. Results qualified as do-not-report should not be used for any reason.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0257 | 62 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| 2 | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Certified Reference Materials | ✓ | Target Analyte List |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

Samples SIB-SC-F28-1-2-07122022 and SIB-SC-F28-2-2.8-07122022 identifications (ID) were not listed on the chains-of-custody (COC). Sample login states they were identified as Samples SIB-SC-E25-1-2-07122022 and SIB-SC-E25-2-2.8-07122022 as listed on the COC, however, Sample SIB SC E25-1-2-07122022 was listed twice on the COC.

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J) and non-detects are estimated (UJ) to indicate a potential low bias.

For batch BKL0010, mercury was detected in the method blank. The mercury result for Sample SIB-SC-D25-2-3-07112022 was flagged as not detected (U-MBL).

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB01-07122022 and EB02-07132022 are associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. All equipment blanks were free from contamination.

Certified Reference Materials

The certified reference material, D112-540 (Metals in Soil), was extracted and analyzed with each analytical batch.

For batch, BKH0505, cadmium and zinc had recoveries greater than the upper control limits. No action was taken except to note the discrepancy.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). For %R values less than 30%, indicating an extreme low bias, associated results are estimated (J/UJ-MSLX). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKI0010, Sample SIB-SC-D25-2-3-07/11/2022 was analyzed as the MS/MSD sample. The mercury recovery in the MS sample was less than the lower control limit, but was in control in the MSD sample; associated samples were estimated (J-MSL). The RPD value for mercury was greater than the control limit. Associated sample results in this batch were estimated (J-MSP).

For Batch BKI0010, Sample SIB-SC-C25-0-1-07/11/2022 was analyzed as the MS/MSD sample. The mercury recovery in the MS sample was less than the lower control limit and was much less than the lower control limit in the MSD sample; all sample results in this batch were estimated (J-MSL,MSLX). The RPD value for mercury was greater than the control limit. Associated sample results in this batch were estimated (J-MSP).

For Batch BKI0120, Sample SIB-SC-F21-2-3-07/13/2022 was analyzed as the MS/MSD sample. The mercury recovery in the MS sample was less than the lower control limit and was much less than the lower control limit in the MSD sample; all sample results in this batch were estimated (J-MSL,MSLX). The RPD value for mercury was greater than the control limit. Associated sample results in this batch were estimated (J-MSP).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0537, Sample SIB-SC-F22-3-4-07/13/2022 was used for the lab duplicate. The RPD values for arsenic, copper, lead, and zinc were greater than the control limit; results in this batch were estimated (J- LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Four sets of field duplicates were submitted:

SIB-SC-D25-1-2-07/11/2022 & FD-09-07/11/2022
SIB-SC-C25-1-2-07/11/2022 & FD-10-07/11/2022
SIB-SC-F22-2-3-07/13/2022 & FD-11-07/13/2022
SIB-SC-F21-1-2-07/13/2022 & FD-12-07/13/2022

For Samples SIB-SC-F22-2-3-07/13/2022 & FD-11-07/13/2022, the RPD value for lead was greater than the control limit; lead results in these two samples were estimated (J-FDPR).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Data were qualified as not detected due to method blank contamination. Results were estimated based on MS/MSD accuracy and precision outliers as well as laboratory duplicate and field duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 122 | ug/kg | D | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 366 | ug/kg | D | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 137 | ug/kg | D | | | ✓ |
| SIB-SC-D26-1-2-07112022 | 22G0257-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 61.5 | ug/kg | D | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-D26-2-3-07112022 | 22G0257-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.2 | ug/kg | D | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 91.1 | ug/kg | D | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 70 | ug/kg | D | | | ✓ |
| SIB-SC-D26-3-4-07112022 | 22G0257-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.8 | ug/kg | D | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 99.3 | ug/kg | D | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 92.4 | ug/kg | D | | | ✓ |
| SIB-SC-D26-4-5-07112022 | 22G0257-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 43.2 | ug/kg | D | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 85.1 | ug/kg | D | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 67.3 | ug/kg | D | | | ✓ |
| SIB-SC-D26-5-6-07112022 | 22G0257-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 57.5 | ug/kg | D | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 158 | ug/kg | D | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 78.7 | ug/kg | D | | | ✓ |
| SIB-SC-D25-1-2-07/11/2022 | 22G0257-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 69.2 | ug/kg | D | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 196 | ug/kg | D | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 87.4 | ug/kg | D | | | ✓ |
| FD-09-07/11/2022 | 22G0257-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 78.7 | ug/kg | D | J | SSH | |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 231 | ug/kg | D | J | SSH | |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 188 | ug/kg | D | J | MSL,SSH | |
| SIB-SC-D25-2-3-07112022 | 22G0257-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.2 | ug/kg | D | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 97.4 | ug/kg | D | | | ✓ |
| SIB-SC-D25-3-4-07112022 | 22G0257-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 58 | ug/kg | D | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 110 | ug/kg | D | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 97.8 | ug/kg | D | | | ✓ |
| SIB-SC-D25-4-5-07112022 | 22G0257-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 46.3 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 80.2 | ug/kg | D | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 58.4 | ug/kg | D | | | ✓ |
| SIB-SC-D25-5-6-07112022 | 22G0257-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 16.6 | ug/kg | D J | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 40.3 | ug/kg | D | | | ✓ |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 46.5 | ug/kg | D | J | MSL | |
| SIB-SC-C25-0-1-07112022 | 22G0257-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 29 | ug/kg | D | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 66.4 | ug/kg | D | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 49.3 | ug/kg | D | | | ✓ |
| SIB-SC-C25-1-2-07/11/2022 | 22G0257-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 24.5 | ug/kg | D | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 68.8 | ug/kg | D | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.5 | ug/kg | D | | | ✓ |
| FD-10-07/11/2022 | 22G0257-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.4 | ug/kg | D | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 62.1 | ug/kg | D | | | ✓ |
| SIB-SC-C25-2-3-07112022 | 22G0257-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 72.3 | ug/kg | D | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 151 | ug/kg | D | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-C25-3-4-07112022 | 22G0257-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 52.6 | ug/kg | D | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 94.3 | ug/kg | D | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 92.4 | ug/kg | D | | | ✓ |
| SIB-SC-C25-4-5-07112022 | 22G0257-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.7 | ug/kg | D | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 88.3 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 76.9 | ug/kg | D | | | ✓ |
| SIB-SC-C25-5-6-07112022 | 22G0257-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 20.5 | ug/kg | D | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 57.8 | ug/kg | D | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 29.5 | ug/kg | D | | | ✓ |
| SIB-SC-C24-0-1-07112022 | 22G0257-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 34 | ug/kg | P1 D | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 73.6 | ug/kg | D | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 43.6 | ug/kg | D | | | ✓ |
| SIB-SC-C24-1-2-07112022 | 22G0257-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.2 | ug/kg | D | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 89.6 | ug/kg | D | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 51.3 | ug/kg | D | | | ✓ |
| SIB-SC-C24-2-3-07112022 | 22G0257-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 56 | ug/kg | D | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 103 | ug/kg | D | | | ✓ |
| SIB-SC-C24-3-4-07112022 | 22G0257-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 52.9 | ug/kg | D | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.4 | ug/kg | D | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 99.2 | ug/kg | D | | | ✓ |
| SIB-SC-C24-4-5-07112022 | 22G0257-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 60.7 | ug/kg | D | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-C24-5-6-07112022 | 22G0257-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 42 | ug/kg | D | | | ✓ |
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.7 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-E24-1-2-07122022 | 22G0257-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 53.7 | ug/kg | D | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 68.8 | ug/kg | D | | | ✓ |
| SIB-SC-E24-2-3-07122022 | 22G0257-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 61.9 | ug/kg | D | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.6 | ug/kg | D | | | ✓ |
| SIB-SC-E24-3-4-07122022 | 22G0257-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 53.2 | ug/kg | D | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 64.8 | ug/kg | D | | | ✓ |
| SIB-SC-E24-4-5-07122022 | 22G0257-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1254 (AROCLOR 1254) | 58.9 | ug/kg | D | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 51.1 | ug/kg | D | | | ✓ |
| SIB-SC-E24-5-6-07122022 | 22G0257-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1248 (AROCLOR 1248) | 86.2 | ug/kg | D | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1254 (AROCLOR 1254) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1260 (AROCLOR 1260) | 104 | ug/kg | D | | | ✓ |
| SIB-SC-E23-1-2-07122022 | 22G0257-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1248 (AROCLOR 1248) | 93.9 | ug/kg | D | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1254 (AROCLOR 1254) | 191 | ug/kg | D | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1260 (AROCLOR 1260) | 131 | ug/kg | D | | | ✓ |
| SIB-SC-E23-2-3-07122022 | 22G0257-31 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1248 (AROCLOR 1248) | 69.7 | ug/kg | D | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1254 (AROCLOR 1254) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1260 (AROCLOR 1260) | 153 | ug/kg | D | | | ✓ |
| SIB-SC-E23-3-4-07122022 | 22G0257-32 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1248 (AROCLOR 1248) | 67.6 | ug/kg | D | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1254 (AROCLOR 1254) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1260 (AROCLOR 1260) | 121 | ug/kg | D | | | ✓ |
| SIB-SC-E23-4-5-07122022 | 22G0257-33 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1254 (AROCLOR 1254) | 57.8 | ug/kg | D | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1260 (AROCLOR 1260) | 84.6 | ug/kg | D | | | ✓ |
| SIB-SC-E23-5-6-07122022 | 22G0257-34 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1248 (AROCLOR 1248) | 102 | ug/kg | D | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1254 (AROCLOR 1254) | 206 | ug/kg | D | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1260 (AROCLOR 1260) | 135 | ug/kg | D | | | ✓ |
| SIB-SC-E25-1-2-07122022 | 22G0257-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 63.4 | ug/kg | D | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 129 | ug/kg | D | | | ✓ |
| SIB-SC-E25-2-3-07122022 | 22G0257-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 54.4 | ug/kg | D | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 95.4 | ug/kg | D | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 89.6 | ug/kg | D | | | ✓ |
| SIB-SC-E25-3-4-07122022 | 22G0257-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1260 (AROCLOR 1260) | 203 | ug/kg | D | | | ✓ |
| SIB-SC-E25-4-5-07122022 | 22G0257-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 58.1 | ug/kg | D | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 109 | ug/kg | D | | | ✓ |
| SIB-SC-E25-5-6-07122022 | 22G0257-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1248 (AROCLOR 1248) | 39.5 | ug/kg | P1 D | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1254 (AROCLOR 1254) | 55 | ug/kg | D | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1260 (AROCLOR 1260) | 52.7 | ug/kg | D | | | ✓ |
| SIB-SC-E30-1-2-07122022 | 22G0257-40 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.8 | ug/kg | P1 D | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1254 (AROCLOR 1254) | 63.3 | ug/kg | D | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1260 (AROCLOR 1260) | 69.4 | ug/kg | D | | | ✓ |
| SIB-SC-E30-2-3-07122022 | 22G0257-41 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.7 | ug/kg | D | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1254 (AROCLOR 1254) | 86.7 | ug/kg | D | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-E30-3-4-07122022 | 22G0257-42 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1248 (AROCLOR 1248) | 84.6 | ug/kg | P1 D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1254 (AROCLOR 1254) | 189 | ug/kg | D | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1260 (AROCLOR 1260) | 166 | ug/kg | D | | | ✓ |
| SIB-SC-E30-4-5-07122022 | 22G0257-43 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1254 (AROCLOR 1254) | 22.7 | ug/kg | D | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1260 (AROCLOR 1260) | 29.4 | ug/kg | D | | | ✓ |
| SIB-SC-E30-5-6-07122022 | 22G0257-44 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1254 (AROCLOR 1254) | 37.5 | ug/kg | D | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1260 (AROCLOR 1260) | 36 | ug/kg | D | | | ✓ |
| SIB-SC-F28-1-2-07122022 | 22G0257-45 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1254 (AROCLOR 1254) | 52.4 | ug/kg | D | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.9 | ug/kg | D | | | ✓ |
| SIB-SC-F28-2-2.8-07122022 | 22G0257-46 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1254 (AROCLOR 1254) | 42.9 | ug/kg | D | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1260 (AROCLOR 1260) | 79.3 | ug/kg | D | | | ✓ |
| SIB-SC-F23-1-2-07132022 | 22G0257-47 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1254 (AROCLOR 1254) | 54.3 | ug/kg | D | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.4 | ug/kg | D | | | ✓ |
| SIB-SC-F23-2-3-07132022 | 22G0257-48 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1254 (AROCLOR 1254) | 121 | ug/kg | D | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1260 (AROCLOR 1260) | 156 | ug/kg | D | | | ✓ |
| SIB-SC-F23-3-4-07132022 | 22G0257-49 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1248 (AROCLOR 1248) | 36.6 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.9 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1260 (AROCLOR 1260) | 155 | ug/kg | D | | | ✓ |
| SIB-SC-F23-4-5-07132022 | 22G0257-50 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1248 (AROCLOR 1248) | 69.1 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1254 (AROCLOR 1254) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1260 (AROCLOR 1260) | 156 | ug/kg | D | | | ✓ |
| SIB-SC-F23-5-6-07132022 | 22G0257-51 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.9 | ug/kg | D | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1254 (AROCLOR 1254) | 73.6 | ug/kg | D | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1260 (AROCLOR 1260) | 30.4 | ug/kg | D | | | ✓ |
| SIB-SC-F22-1-2-07132022 | 22G0257-52 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1254 (AROCLOR 1254) | 46.3 | ug/kg | D | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-F22-2-3-07/13/2022 | 22G0257-53 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3.8 | ug/kg | J | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 8 | ug/kg | | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 6 | ug/kg | | | | ✓ |
| FD-11-07/13/2022 | 22G0257-54RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3.2 | ug/kg | J | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 7 | ug/kg | | | | ✓ |
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 2.3 | ug/kg | J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-F22-3-4-07132022 | 22G0257-55RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1.9 | ug/kg | J | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.7 | ug/kg | J | | | ✓ |
| SIB-SC-F22-4-5-07132022 | 22G0257-56RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 2.2 | ug/kg | J | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1.2 | ug/kg | J | | | ✓ |
| SIB-SC-F22-5-6-07132022 | 22G0257-57RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.7 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1254 (AROCLOR 1254) | 141 | ug/kg | D | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1260 (AROCLOR 1260) | 185 | ug/kg | D | | | ✓ |
| SIB-SC-F21-1-2-07/13/2022 | 22G0257-58 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1248 (AROCLOR 1248) | 38.8 | ug/kg | P1 D | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1254 (AROCLOR 1254) | 98.8 | ug/kg | D | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1260 (AROCLOR 1260) | 157 | ug/kg | D | | | ✓ |
| FD-12-07/13/2022 | 22G0257-59 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1248 (AROCLOR 1248) | 41 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1254 (AROCLOR 1254) | 86.5 | ug/kg | D | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-F21-2-3-07132022 | 22G0257-60 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1254 (AROCLOR 1254) | 225 | ug/kg | D | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1260 (AROCLOR 1260) | 171 | ug/kg | D | | | ✓ |
| SIB-SC-F21-3-4-07132022 | 22G0257-61 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 6 | ug/kg | | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 18.9 | ug/kg | | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 15.4 | ug/kg | | | | ✓ |
| SIB-SC-F21-4-5-07132022 | 22G0257-62RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0257 |
| HGL Reviewer | Ken Rapuano 7/11/2023 |
| HGL Senior Review | Justin Hersh 7/14/2023 |

General issues:

Per the request of the HGL DB manager, any reason codes were moved from the approval_code column to the dqm_remark column.

The laboratory reported non-detected results in an alternative format in the hardcopy report; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer populated the validated_yn field with Y.

PCBs as Aroclors – 8082A

Surrogates: The DV report noted that several samples had a single surrogate out of control and no qualification was applied. This is generally in accordance with the HGL Consistency Memo; however, the %R for DCB on column 1 was more than 20% higher than the upper control limit for SIB-SC-F21-3-4-07/13/2022. The detected results for Aroclor 1254 and Aroclor 1260 were reported from column 1 and were qualified J-SSH by the HGL reviewer.

Field Duplicates: The Aroclor 1254 results were 46.3 µg/kg for sample SIB-SC-F22-2-3-07/13/2022 and 8.0 µg/kg for its field duplicate FD-11-07/13/2022. Although the two results are within the parent sample RL of 20 µg/kg, the parent sample required a 5x dilution while the duplicate was analyzed undiluted. In the judgment of the HGL reviewer, these two results are sufficiently different to warrant qualification. The Aroclor 1254 results for samples SIB-SC-F22-2-3-07/13/2022 and FD-11-07/13/2022 are qualified J-FDPA.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F22-2-3-07/13/2022 | Aroclor 1254 | 46.3 | -- | J | J | FDPA |
| FD-11-07/13/2022 | Aroclor 1254 | 8.0 | -- | J | J | FDPA |
| SIB-SC-F21-3-4-07/13/2022 | Aroclor 1254 | 225 | -- | J | J | SSH |
| | Aroclor 1260 | 171 | -- | J | J | SSH |

Metals – 6020B and 7471B

Equipment Blanks: The DV report correctly indicated that equipment blanks EB01-07122022 and EB02-07132022 (results reported in SDG 22G0258) were associated with the samples submitted in this SDD; however, the DV report incorrectly indicated that both EBs were free from contamination. Both EBs were contaminated with low levels of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with both EBs, and this concentration was greater than that reported in the EBs. In the judgment of the HGL reviewer, the detected mercury results in the EBs represent laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required.

Standard Reference Material: The SRM analyzed in association with batch BKH0505 had %Rs above the upper control limit for cadmium and zinc. This was noted in the DV report, but no qualification was applied. The %R for zinc was 119.7% and the upper control limit is 119.4%; in the judgment of the HGL reviewer, this exceedance is nominal and no qualification is required. The %R for cadmium was >5% above the upper control limit. The HGL reviewer applied J-SRMH to all detected cadmium results for samples prepared in batch BKH0505.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-D26-1-2-07/11/2022 | Cadmium | 0.39 | -- | J | J | SRMH |
| SIB-SC-D26-2-3-07/11/2022 | Cadmium | 0.39 | -- | J | J | SRMH |
| SIB-SC-D26-3-4-07/11/2022 | Cadmium | 0.28 | -- | J | J | SRMH |
| SIB-SC-D26-4-5-07/11/2022 | Cadmium | 0.44 | -- | J | J | SRMH |
| SIB-SC-D26-5-6-07/11/2022 | Cadmium | 0.42 | -- | J | J | SRMH |
| SIB-SC-D25-1-2-07/11/2022 | Cadmium | 0.53 | -- | J | J | SRMH |
| FD-09-07/11/2022 | Cadmium | 0.51 | -- | J | J | SRMH |
| SIB-SC-D25-2-3-07/11/2022 | Cadmium | 0.71 | -- | J | J | SRMH |
| SIB-SC-D25-3-4-07/11/2022 | Cadmium | 0.45 | -- | J | J | SRMH |
| SIB-SC-D25-4-5-07/11/2022 | Cadmium | 0.44 | -- | J | J | SRMH |
| SIB-SC-D25-5-6-07/11/2022 | Cadmium | 0.49 | -- | J | J | SRMH |
| SIB-SC-C25-1-2-07/11/2022 | Cadmium | 0.67 | -- | J | J | SRMH |
| FD-10-07/11/2022 | Cadmium | 0.56 | -- | J | J | SRMH |
| SIB-SC-C25-2-3-07/11/2022 | Cadmium | 0.67 | -- | J | J | SRMH |
| SIB-SC-C25-3-4-07/11/2022 | Cadmium | 0.6 | -- | J | J | SRMH |
| SIB-SC-C25-4-5-07/11/2022 | Cadmium | 0.45 | -- | J | J | SRMH |
| SIB-SC-C25-5-6-07/11/2022 | Cadmium | 0.42 | -- | J | J | SRMH |
| SIB-SC-C24-0-1-07/11/2022 | Cadmium | 0.35 | -- | J | J | SRMH |
| SIB-SC-C24-1-2-07/11/2022 | Cadmium | 0.34 | -- | J | J | SRMH |
| SIB-SC-C24-2-3-07/11/2022 | Cadmium | 0.43 | -- | J | J | SRMH |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
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EcoChem Project: C28601-1

SDG: 22G0312

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Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**. This revised report was corrected to include qualification due to surrogate %R outliers.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0312 | SIB-SC-G06-1-2-07142022 | 22G0312-01 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G06-2-3-07142022 | 22G0312-02 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G06-3-4-07142022 | 22G0312-03 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G06-4-5-07142022 | 22G0312-04 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G06-5-6-07142022 | 22G0312-05 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SE | ✓ | ✓ | ✓ |
| 22G0312 | FD-13-07/14/2022 | 22G0312-07 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G07-2-3-07142022 | 22G0312-08 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G07-3-4-07142022 | 22G0312-09 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G07-4-5-07142022 | 22G0312-10 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G07-5-6-07142022 | 22G0312-11 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F08-1-2-07142022 | 22G0312-12 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F08-2-3-07142022 | 22G0312-13 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F08-3-4-07142022 | 22G0312-14 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F08-4-5-07142022 | 22G0312-15 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F08-5-6-07142022 | 22G0312-16 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G08-1-2-07142022 | 22G0312-17 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G08-2-3-07142022 | 22G0312-18 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G08-3-4-07142022 | 22G0312-19 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G08-4-5-07142022 | 22G0312-20 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-G08-5-6-07142022 | 22G0312-21 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F09-1-2-07142022 | 22G0312-23 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F09-2-3-07142022 | 22G0312-24 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F09-3-4-07142022 | 22G0312-25 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F09-4-5-07142022 | 22G0312-26 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-F09-5-6-07142022 | 22G0312-27 | SE | ✓ | ✓ | ✓ |

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0312 | SIB-SC-D19-1-2-07192022 | 22G0312-35 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D19-2-3-07192022 | 22G0312-36 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D19-3-4-07192022 | 22G0312-37 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D19-4-5-07192022 | 22G0312-38 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D19-5-6-07192022 | 22G0312-39 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D17-1-2-07192022 | 22G0312-49 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SE | ✓ | ✓ | ✓ |
| 22G0312 | FD-14-07/19/2022 | 22G0312-51 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D17-3-4-07192022 | 22G0312-52 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D17-4-5-07192022 | 22G0312-53 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D17-5-6-07192022 | 22G0312-54 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-0-1-07192022 | 22G0312-64 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-1-2-07192022 | 22G0312-65 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-2-3-07192022 | 22G0312-66 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-3-4-07192022 | 22G0312-67 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-4-5-07192022 | 22G0312-68 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-D18-5-6-07192022 | 22G0312-69 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-C18-1-2-07192022 | 22G0312-76 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-C18-2-3-07192022 | 22G0312-77 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-C18-3-4-07192022 | 22G0312-78 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-C18-4-5-07192022 | 22G0312-79 | SE | ✓ | ✓ | ✓ |
| 22G0312 | SIB-SC-C18-5-6-07192022 | 22G0312-80 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc, Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0312 | 48 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

With the noted exception, the laboratory submitted all required deliverables for a compliance level review.

For Sample FD-13-07/14/2022, results were reported from a combination of 1x, 5x, and 50x analyses on the summary forms; however, only the raw data for the 5x and 50x were included in the PDF. The laboratory was contacted and submitted a revised PDF, reporting results from the 5x and 50x analyses.

For Sample SIB-SC-F08-1-2-07142022, results were reported from a combination of 1x, 5x, and 25x analyses on the summary forms; however, only raw data for the 5x and 25x were included in the PDF. The laboratory was contacted and submitted a revised PDF, reporting results from the 5x and 25x analyses.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

For Sample FD-13-07/14/2022, for results reported from the 50x analysis, the dilution factor is incorrectly entered as 1. The correct dilution factor was added to the "approval_a" column of the EDD. Raw data for the 1x analyses was not included in the PDF and should not be used. All 1x analyses results in the EDD were DNR-EXC.

For Sample SIB-SC-F08-1-2-07142022, for results reported from the 1x analysis, the dilution factor is incorrectly entered as 25. The correct dilution factor was added to the "approval_a" column of the EDD. Raw data for the 1x analyses was not included in the PDF and should not be used. All 1x analyses results in the EDD were DNR-EXC.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| 2 | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB02-07132022 and EB03-07202022 are associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDGs 22G0258 and 22G0343. EB02-07132022 and EB03-07202022 were free from contamination.

Laboratory Control Sample/Laboratory Control Sample Duplicate

Laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were analyzed at the required frequency of one per batch of twenty or fewer samples. Precision is evaluated using the RPD values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample.

Batch BKH0518: For Aroclor 1260, the RPD value was greater than the control limit. Positive results for Aroclors 1248, 1254, 1260, 1262, and 1268 in the associated samples were estimated (J-LCSP).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples to monitor extraction efficiency. The samples were analyzed using dual column confirmation. Percent recovery (%R) values from both columns were evaluated. No qualifiers were assigned if three of the four %R values were within control limits and the results for target compounds were comparable between the two columns. In cases where the results were not comparable, the data were evaluated and qualified accordingly.

The following outliers resulted in qualification.

For Sample SIB-SC-D18-2-3-07192022, the %R values for DCBP were greater than the upper control limit on both columns. Positive results were estimated (J-SSH).

For Sample SIB-SC-G07-2-3-07142022, there was matrix interference that impacted late eluting peaks, resulting in a %R value outlier for DCBP. This matrix interference also impacted Aroclor 1260 peaks. The result for Aroclor 1260 was estimated (J-SSH).

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 30%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted.

SIB-SC-G07-1-2-07/14/2022 & FD-13-07/14/2022: For Aroclors 1248, 1254, and 1260, the RPD value was greater than the control limit; results for these compounds were estimated (J-FDPR) in the parent and field duplicate samples.

SIB-SC-D17-2-3-07/19/2022 & FD-14-07/19/2022: For Aroclor 1254, the difference value was greater than 2x the RL; results for Aroclor 1254 were estimated (J-FDPA) in the parent and field duplicate samples.

Reported Results

The laboratory analyzed and reported several samples at two or more dilutions due to the sample matrix and/or target compound concentrations. In these cases, results from one of the dilutions were qualified as do-not-report (DNR-EXC) to indicate which of the results should not be used.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|-------------------------|----------|-----------------------------|---|
| FD-13-07/14/2022 | 5x | DNR-EXC Positive results | Aroclors 1248, 1254, 1260 reported from 50x. Aroclors 1016, 1221, 1232, 1242, 1262, 1268 reported from 5x |
| | 50x | DNR-EXC Non-detects | |
| SIB-SC-G07-3-4-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-G07-4-5-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-G07-5-6-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-F08-1-2-07142022 | 5x | None | |
| | 25x | DNR-EXC | Not needed. All concentrations within calibration range in 5x |
| SIB-SC-F08-5-6-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-G08-3-4-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|-------------------------|----------|-----------|---------------------------------|
| SIB-SC-G08-4-5-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-G08-5-6-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-F09-4-5-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-F09-5-6-07142022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-D17-4-5-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-D18-2-3-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-D18-3-4-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-D18-4-5-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-C18-2-3-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |
| SIB-SC-C18-3-4-07192022 | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| | 1x | None | |

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Data were estimated due to LCS/LCSD and field duplicate precision outliers and surrogate accuracy outliers.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0312 | 48 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB02-07132022 and EB03-07202022 are associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDGs 22G0258 and 22G0343. EB02-07132022 and EB03-07202022 were free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). For %R values less than 30%, indicating an extreme low bias, associated results are estimated (J/UJ-MSLX). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKI0121, Sample SIB-SC-D17-3-4-07/19/2022 was analyzed as the MS/MSD. Mercury was not recovered in the MS sample and the associated MSD recovery was less than the lower limit. The RPD value for mercury was greater than the control limit. A post digestion spike (PDS) was performed; however, the spike concentration was much less than the parent sample concentration and could not be evaluated for accuracy. All sample results in this batch were estimated (J-MSLX, MSL, MSP, PDN).

For Batch BKI0669, Sample SIB-SC-G07-2-3-07/14/2022 was analyzed as the MS/MSD. Mercury recoveries were less than the lower limit. The RPD value for mercury was greater than the control limit. A post digestion spike (PDS) was performed; however, the spike concentration was much less than the parent sample concentration and could not be evaluated for accuracy. All sample results in this batch were estimated (J-MSL, MSP, PDN).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0578, Sample SIB-SC-D17-3-4-07/19/2022 was used for the lab duplicate. The RPD value for lead was greater than the control limit; results in this batch were estimated (J-LDPR).

For Batch BKH0736, Sample SIB-SC-G07-2-3-07/14/2022 was used for the lab duplicate. The RPD values for lead and arsenic were greater than the control limit; results in this batch were estimated (J- LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted:

SIB-SC-G07-1-2-07/14/2022 & FD-13-07/14/2022

SIB-SC-D17-2-3-07/19/2022 & FD-14-07/19/2022

For Samples SIB-SC-D17-2-3-07/19/2022 & FD-14-07/19/2022, the difference value for mercury was greater than the control limit; mercury results in these two samples were estimated (J-FDPA).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as laboratory duplicate and field duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

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|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW6020B | ARSENIC | 9.85 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW6020B | COPPER | 302 | mg/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW6020B | LEAD | 138 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW6020B | ZINC | 352 | mg/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW7471B | MERCURY | 0.437 | mg/kg | | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 370 | ug/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 697 | ug/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 246 | ug/kg | D | | | ✓ |
| SIB-SC-G06-1-2-07142022 | 22G0312-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW6020B | ARSENIC | 12.9 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW6020B | CADMIUM | 0.26 | mg/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW6020B | COPPER | 767 | mg/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW6020B | LEAD | 64 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW6020B | ZINC | 361 | mg/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW7471B | MERCURY | 0.277 | mg/kg | | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 129 | ug/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 222 | ug/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 151 | ug/kg | D | | | ✓ |
| SIB-SC-G06-2-3-07142022 | 22G0312-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW6020B | ARSENIC | 11 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW6020B | COPPER | 416 | mg/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW6020B | LEAD | 100 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW6020B | ZINC | 379 | mg/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW7471B | MERCURY | 0.54 | mg/kg | | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 305 | ug/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 165 | ug/kg | D | | | ✓ |
| SIB-SC-G06-3-4-07142022 | 22G0312-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW6020B | ARSENIC | 8.23 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW6020B | COPPER | 173 | mg/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW6020B | LEAD | 104 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW6020B | ZINC | 230 | mg/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW7471B | MERCURY | 0.319 | mg/kg | | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 93.4 | ug/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 197 | ug/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-G06-4-5-07142022 | 22G0312-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW6020B | ARSENIC | 5.56 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW6020B | COPPER | 81 | mg/kg | D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW6020B | LEAD | 33.9 | mg/kg | D | J | LDPR | |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW6020B | ZINC | 151 | mg/kg | D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW7471B | MERCURY | 0.473 | mg/kg | | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.1 | ug/kg | D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 88.5 | ug/kg | P1 D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 79.6 | ug/kg | D | | | ✓ |
| SIB-SC-G06-5-6-07142022 | 22G0312-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW6020B | ARSENIC | 21.4 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW6020B | CADMIUM | 0.94 | mg/kg | D J | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW6020B | COPPER | 379 | mg/kg | D | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW6020B | LEAD | 125 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW6020B | ZINC | 937 | mg/kg | D | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW7471B | MERCURY | 0.292 | mg/kg | | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 198 | ug/kg | D | J | FDPR | |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 391 | ug/kg | D | J | FDPR | |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 187 | ug/kg | D | J | FDPR | |
| SIB-SC-G07-1-2-07/14/2022 | 22G0312-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07 | SW6020B | ARSENIC | 19.8 | mg/kg | D | J | LDPR | |
| FD-13-07/14/2022 | 22G0312-07 | SW6020B | CADMIUM | 0.72 | mg/kg | D | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07 | SW6020B | COPPER | 348 | mg/kg | D | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07 | SW6020B | LEAD | 141 | mg/kg | D | J | LDPR | |
| FD-13-07/14/2022 | 22G0312-07 | SW6020B | ZINC | 853 | mg/kg | D | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07 | SW7471B | MERCURY | 0.277 | mg/kg | | J | MSL,MSP,PDN | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 1080 | ug/kg | E D | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 2470 | ug/kg | E D | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 760 | ug/kg | D | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 1240 | ug/kg | D | J | FDPR | |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3930 | ug/kg | D | J | FDPR | |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1210 | ug/kg | D | J | FDPR | |
| FD-13-07/14/2022 | 22G0312-07RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW6020B | ARSENIC | 5.56 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW6020B | CADMIUM | 0.29 | mg/kg | D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW6020B | COPPER | 86.8 | mg/kg | D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW6020B | LEAD | 31.5 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW6020B | ZINC | 174 | mg/kg | D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW7471B | MERCURY | 0.142 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 112 | ug/kg | P1 D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 252 | ug/kg | D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 70.8 | ug/kg | P1 D | | | ✓ |
| SIB-SC-G07-2-3-07142022 | 22G0312-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW6020B | ARSENIC | 3.93 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW6020B | CADMIUM | 0.13 | mg/kg | D | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW6020B | COPPER | 34.3 | mg/kg | D | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW6020B | LEAD | 6.6 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW6020B | ZINC | 70.4 | mg/kg | D | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW7471B | MERCURY | 0.0323 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 4.4 | ug/kg | | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-3-4-07142022 | 22G0312-09RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW6020B | ARSENIC | 3.94 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW6020B | COPPER | 37.5 | mg/kg | D | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW6020B | LEAD | 6.54 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW6020B | ZINC | 72 | mg/kg | D | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW7471B | MERCURY | 0.0346 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 17.3 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.9 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 6.6 | ug/kg | | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 13.7 | ug/kg | | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.9 | ug/kg | | | | ✓ |
| SIB-SC-G07-4-5-07142022 | 22G0312-10RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW6020B | ARSENIC | 3.69 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW6020B | COPPER | 40.7 | mg/kg | D | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW6020B | LEAD | 6.65 | mg/kg | D | J | LDPR | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW6020B | ZINC | 70.5 | mg/kg | D | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW7471B | MERCURY | 0.0393 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 9.3 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 4.1 | ug/kg | | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 7.7 | ug/kg | | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-G07-5-6-07142022 | 22G0312-11RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW6020B | ARSENIC | 8.69 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW6020B | COPPER | 224 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW6020B | LEAD | 100 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW6020B | ZINC | 375 | mg/kg | D | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW7471B | MERCURY | 0.184 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 496 | ug/kg | D | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 975 | ug/kg | D | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 368 | ug/kg | D | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 525 | ug/kg | D | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1090 | ug/kg | D | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 268 | ug/kg | D | DNR | EXC | |
| SIB-SC-F08-1-2-07142022 | 22G0312-12RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW6020B | ARSENIC | 6.68 | mg/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW6020B | CADMIUM | 0.63 | mg/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW6020B | COPPER | 144 | mg/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW6020B | LEAD | 104 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW6020B | ZINC | 324 | mg/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW7471B | MERCURY | 0.49 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 81.8 | ug/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 146 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-F08-2-3-07142022 | 22G0312-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW6020B | ARSENIC | 6.44 | mg/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW6020B | COPPER | 78.3 | mg/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW6020B | LEAD | 42.1 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW6020B | ZINC | 199 | mg/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW7471B | MERCURY | 0.151 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 29 | ug/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 62.7 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 91.5 | ug/kg | D | | | ✓ |
| SIB-SC-F08-3-4-07142022 | 22G0312-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW6020B | ARSENIC | 5.21 | mg/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW6020B | COPPER | 67.7 | mg/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW6020B | LEAD | 45.4 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW6020B | ZINC | 153 | mg/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW7471B | MERCURY | 0.0977 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 33.9 | ug/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 66.8 | ug/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.3 | ug/kg | D | | | ✓ |
| SIB-SC-F08-4-5-07142022 | 22G0312-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW6020B | ARSENIC | 3.99 | mg/kg | D | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW6020B | COPPER | 50.1 | mg/kg | D | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW6020B | LEAD | 9.58 | mg/kg | D | J | LDPR | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW6020B | ZINC | 83 | mg/kg | D | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW7471B | MERCURY | 0.0828 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 11 | ug/kg | D J | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.1 | ug/kg | D J | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.8 | ug/kg | | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 3.8 | ug/kg | J | | | ✓ |
| SIB-SC-F08-5-6-07142022 | 22G0312-16RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW6020B | ARSENIC | 8.73 | mg/kg | D | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW6020B | COPPER | 189 | mg/kg | D | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW6020B | LEAD | 58.7 | mg/kg | D | J | LDPR | |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW6020B | ZINC | 318 | mg/kg | D | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW7471B | MERCURY | 0.135 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 50.8 | ug/kg | D | J | LCSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 115 | ug/kg | D | J | LCSP | |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 66.7 | ug/kg | D | J | LCSP | |
| SIB-SC-G08-1-2-07142022 | 22G0312-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW6020B | ARSENIC | 12.3 | mg/kg | D | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW6020B | COPPER | 304 | mg/kg | D | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW6020B | LEAD | 109 | mg/kg | D | J | LDPR | |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW6020B | ZINC | 496 | mg/kg | D | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW7471B | MERCURY | 0.181 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 187 | ug/kg | D | J | LCSP | |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 435 | ug/kg | D | J | LCSP | |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 183 | ug/kg | D | J | LCSP | |
| SIB-SC-G08-2-3-07142022 | 22G0312-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW6020B | ARSENIC | 2.51 | mg/kg | D | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW6020B | COPPER | 16.3 | mg/kg | D | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW6020B | LEAD | 9.1 | mg/kg | D | J | LDPR | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW6020B | ZINC | 49.5 | mg/kg | D | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW7471B | MERCURY | 0.0233 | mg/kg | J | J | MSL,MSP,PDN | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 8.9 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 15.5 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 5.7 | ug/kg | D J | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 5.2 | ug/kg | | J | LCSP | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 10.7 | ug/kg | | J | LCSP | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 3.2 | ug/kg | J | J | LCSP | |
| SIB-SC-G08-3-4-07142022 | 22G0312-19RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW6020B | ARSENIC | 2.59 | mg/kg | D | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW6020B | COPPER | 17.7 | mg/kg | D | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW6020B | LEAD | 10.2 | mg/kg | D | J | LDPR | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW6020B | ZINC | 51.7 | mg/kg | D | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW7471B | MERCURY | 0.0222 | mg/kg | J | J | MSL,MSP,PDN | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-4-5-07142022 | 22G0312-20RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW6020B | ARSENIC | 3.56 | mg/kg | D | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW6020B | COPPER | 25.2 | mg/kg | D | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW6020B | LEAD | 19.1 | mg/kg | D | J | LDPR | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW6020B | ZINC | 65.9 | mg/kg | D | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW7471B | MERCURY | 0.0469 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-G08-5-6-07142022 | 22G0312-21RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW6020B | ARSENIC | 5.17 | mg/kg | D | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW6020B | COPPER | 68.8 | mg/kg | D | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW6020B | LEAD | 44 | mg/kg | D | J | LDPR | |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW6020B | ZINC | 158 | mg/kg | D | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW7471B | MERCURY | 0.359 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 26.9 | ug/kg | P1 D | J | LCSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 75.2 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 70.4 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-1-2-07142022 | 22G0312-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW6020B | ARSENIC | 4.26 | mg/kg | D | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW6020B | CADMIUM | 0.24 | mg/kg | D | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW6020B | COPPER | 56.1 | mg/kg | D | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW6020B | LEAD | 59.8 | mg/kg | D | J | LDPR | |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW6020B | ZINC | 139 | mg/kg | D | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW7471B | MERCURY | 0.179 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.8 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 118 | ug/kg | P1 D | J | LCSP | |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 238 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-2-3-07142022 | 22G0312-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW6020B | ARSENIC | 4.56 | mg/kg | D | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW6020B | COPPER | 42 | mg/kg | D | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW6020B | LEAD | 16.2 | mg/kg | D | J | LDPR | |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW6020B | ZINC | 91.9 | mg/kg | D | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW7471B | MERCURY | 0.0686 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 54.8 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 127 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 34.8 | ug/kg | D | J | LCSP | |
| SIB-SC-F09-3-4-07142022 | 22G0312-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW6020B | ARSENIC | 4.11 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------|------------------------------|
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW6020B | COPPER | 39 | mg/kg | D | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW6020B | LEAD | 7.45 | mg/kg | D | J | LDPR | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW6020B | ZINC | 75.2 | mg/kg | D | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW7471B | MERCURY | 0.0772 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 10.8 | ug/kg | D J | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.1 | ug/kg | | J | LCSP | |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-4-5-07142022 | 22G0312-26RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW6020B | ARSENIC | 3.87 | mg/kg | D | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW6020B | COPPER | 36.9 | mg/kg | D | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW6020B | LEAD | 6.75 | mg/kg | D | J | LDPR | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW6020B | ZINC | 72 | mg/kg | D | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW7471B | MERCURY | 0.0671 | mg/kg | | J | MSL,MSP,PDN | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 5.3 | ug/kg | | J | LCSP | |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F09-5-6-07142022 | 22G0312-27RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW6020B | ARSENIC | 9.91 | mg/kg | D | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW6020B | CADMIUM | 0.69 | mg/kg | D | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW6020B | COPPER | 165 | mg/kg | D | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW6020B | LEAD | 74.5 | mg/kg | D | J | LDPR | |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW6020B | ZINC | 420 | mg/kg | D | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW7471B | MERCURY | 0.224 | mg/kg | | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1248 (AROCLOR 1248) | 77.1 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1254 (AROCLOR 1254) | 218 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1260 (AROCLOR 1260) | 133 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-1-2-07192022 | 22G0312-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW6020B | ARSENIC | 7.47 | mg/kg | D | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW6020B | CADMIUM | 0.67 | mg/kg | D | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW6020B | COPPER | 116 | mg/kg | D | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW6020B | LEAD | 80.5 | mg/kg | D | J | LDPR | |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW6020B | ZINC | 317 | mg/kg | D | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW7471B | MERCURY | 0.271 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 95.7 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 297 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 159 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-2-3-07192022 | 22G0312-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW6020B | ARSENIC | 6.41 | mg/kg | D | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW6020B | COPPER | 76.9 | mg/kg | D | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW6020B | LEAD | 54.7 | mg/kg | D | J | LDPR | |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW6020B | ZINC | 271 | mg/kg | D | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW7471B | MERCURY | 0.239 | mg/kg | | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 73 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 143 | ug/kg | P1 D | J | LCSP | |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 155 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-3-4-07192022 | 22G0312-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW6020B | ARSENIC | 6.5 | mg/kg | D | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW6020B | COPPER | 75.5 | mg/kg | D | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW6020B | LEAD | 49.6 | mg/kg | D | J | LDPR | |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW6020B | ZINC | 267 | mg/kg | D | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW7471B | MERCURY | 0.238 | mg/kg | | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1248 (AROCLOR 1248) | 106 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 208 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1260 (AROCLOR 1260) | 153 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-4-5-07192022 | 22G0312-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW6020B | ARSENIC | 5.99 | mg/kg | D | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW6020B | COPPER | 62.4 | mg/kg | D | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW6020B | LEAD | 44.1 | mg/kg | D | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW6020B | ZINC | 249 | mg/kg | D | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW7471B | MERCURY | 0.187 | mg/kg | | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1248 (AROCLOR 1248) | 65.1 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.3 | ug/kg | P1 D | J | LCSP | |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.8 | ug/kg | D | J | LCSP | |
| SIB-SC-D19-5-6-07192022 | 22G0312-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW6020B | ARSENIC | 5.92 | mg/kg | D | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW6020B | COPPER | 81.3 | mg/kg | D | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW6020B | LEAD | 50.7 | mg/kg | D | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW6020B | ZINC | 213 | mg/kg | D | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW7471B | MERCURY | 0.196 | mg/kg | | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1248 (AROCLOR 1248) | 110 | ug/kg | D | J | LCSP | |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1254 (AROCLOR 1254) | 241 | ug/kg | D | J | LCSP | |
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1260 (AROCLOR 1260) | 110 | ug/kg | D | J | LCSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------------------|------------------------------|
| SIB-SC-D17-1-2-07192022 | 22G0312-49 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW6020B | ARSENIC | 5.38 | mg/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW6020B | CADMIUM | 0.31 | mg/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW6020B | COPPER | 46.6 | mg/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW6020B | LEAD | 26.8 | mg/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW6020B | ZINC | 118 | mg/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW7471B | MERCURY | 0.105 | mg/kg | | J | MSLX,MSL,MSP,PDN,FDPA | |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1248 (AROCLOR 1248) | 26 | ug/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1254 (AROCLOR 1254) | 83.9 | ug/kg | D | J | FDPA | |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1260 (AROCLOR 1260) | 37.4 | ug/kg | D | | | ✓ |
| SIB-SC-D17-2-3-07/19/2022 | 22G0312-50 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW6020B | ARSENIC | 5.83 | mg/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW6020B | COPPER | 59.5 | mg/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW6020B | LEAD | 33 | mg/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW6020B | ZINC | 151 | mg/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW7471B | MERCURY | 0.277 | mg/kg | | J | MSLX,MSL,MSP,PDN,FDPA | |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1254 (AROCLOR 1254) | 24.5 | ug/kg | D | J | FDPA | |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1260 (AROCLOR 1260) | 25.1 | ug/kg | D | | | ✓ |
| FD-14-07/19/2022 | 22G0312-51 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW6020B | ARSENIC | 4.6 | mg/kg | D | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW6020B | CADMIUM | 0.15 | mg/kg | D J | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW6020B | COPPER | 41.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW6020B | LEAD | 14.8 | mg/kg | D | J | LDPR | |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW6020B | ZINC | 90.8 | mg/kg | D | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW7471B | MERCURY | 0.1 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1248 (AROCLOR 1248) | 22.1 | ug/kg | D | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1254 (AROCLOR 1254) | 72 | ug/kg | D | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1260 (AROCLOR 1260) | 23.4 | ug/kg | D | | | ✓ |
| SIB-SC-D17-3-4-07192022 | 22G0312-52 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW6020B | ARSENIC | 4.56 | mg/kg | D | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW6020B | COPPER | 41.1 | mg/kg | D | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW6020B | LEAD | 7.16 | mg/kg | D | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW6020B | ZINC | 80.2 | mg/kg | D | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW7471B | MERCURY | 0.0532 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 2.9 | ug/kg | J | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3.6 | ug/kg | J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1.2 | ug/kg | J | | | ✓ |
| SIB-SC-D17-4-5-07192022 | 22G0312-53RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW6020B | ARSENIC | 4.11 | mg/kg | D | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW6020B | COPPER | 36.6 | mg/kg | D | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW6020B | LEAD | 6.64 | mg/kg | D | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW6020B | ZINC | 71 | mg/kg | D | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW7471B | MERCURY | 0.0507 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D17-5-6-07192022 | 22G0312-54 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW6020B | ARSENIC | 6.68 | mg/kg | D | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW6020B | COPPER | 102 | mg/kg | D | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW6020B | LEAD | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW6020B | ZINC | 280 | mg/kg | D | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW7471B | MERCURY | 0.272 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1248 (AROCLOR 1248) | 58 | ug/kg | | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1254 (AROCLOR 1254) | 164 | ug/kg | | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1260 (AROCLOR 1260) | 133 | ug/kg | | | | ✓ |
| SIB-SC-D18-0-1-07192022 | 22G0312-64 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW6020B | ARSENIC | 5.12 | mg/kg | D | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW6020B | COPPER | 66.1 | mg/kg | D | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW6020B | LEAD | 55.9 | mg/kg | D | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW6020B | ZINC | 204 | mg/kg | D | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW7471B | MERCURY | 0.811 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1248 (AROCLOR 1248) | 41.5 | ug/kg | | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1254 (AROCLOR 1254) | 122 | ug/kg | | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1260 (AROCLOR 1260) | 152 | ug/kg | | | | ✓ |
| SIB-SC-D18-1-2-07192022 | 22G0312-65 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW6020B | ARSENIC | 5.21 | mg/kg | D | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW6020B | COPPER | 64.2 | mg/kg | D | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW6020B | LEAD | 47.7 | mg/kg | D | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW6020B | ZINC | 163 | mg/kg | D | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW7471B | MERCURY | 0.815 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1254 (AROCLOR 1254) | 80 | ug/kg | | J | SSH | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1260 (AROCLOR 1260) | 163 | ug/kg | | J | SSH | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 126 | ug/kg | D | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 169 | ug/kg | D | DNR | EXC | |
| SIB-SC-D18-2-3-07192022 | 22G0312-66RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW6020B | ARSENIC | 5.05 | mg/kg | D | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW6020B | COPPER | 53.1 | mg/kg | D | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW6020B | LEAD | 42.4 | mg/kg | D | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW6020B | ZINC | 148 | mg/kg | D | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW7471B | MERCURY | 0.636 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1248 (AROCLOR 1248) | 5.5 | ug/kg | | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1254 (AROCLOR 1254) | 18.5 | ug/kg | | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1260 (AROCLOR 1260) | 47 | ug/kg | | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 37.2 | ug/kg | D | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 51.3 | ug/kg | D | DNR | EXC | |
| SIB-SC-D18-3-4-07192022 | 22G0312-67RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW6020B | ARSENIC | 3.74 | mg/kg | D | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW6020B | CADMIUM | 0.21 | mg/kg | D | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW6020B | COPPER | 37.7 | mg/kg | D | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW6020B | LEAD | 20 | mg/kg | D | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW6020B | ZINC | 91.7 | mg/kg | D | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW7471B | MERCURY | 0.145 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1248 (AROCLOR 1248) | 23.4 | ug/kg | P1 | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1254 (AROCLOR 1254) | 20.8 | ug/kg | | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1260 (AROCLOR 1260) | 10.2 | ug/kg | | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 38.5 | ug/kg | P1 D | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 41.5 | ug/kg | D | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 11.2 | ug/kg | D J | DNR | EXC | |
| SIB-SC-D18-4-5-07192022 | 22G0312-68RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW6020B | ARSENIC | 3.73 | mg/kg | D | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW6020B | COPPER | 36.2 | mg/kg | D | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW6020B | LEAD | 7.74 | mg/kg | D | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW6020B | ZINC | 70.8 | mg/kg | D | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW7471B | MERCURY | 0.0647 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D18-5-6-07192022 | 22G0312-69 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW6020B | ARSENIC | 3.24 | mg/kg | D | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW6020B | CADMIUM | 0.15 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW6020B | COPPER | 35.6 | mg/kg | D | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW6020B | LEAD | 10.9 | mg/kg | D | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW6020B | ZINC | 86.5 | mg/kg | D | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW7471B | MERCURY | 0.11 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1248 (AROCLOR 1248) | 12.1 | ug/kg | | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1254 (AROCLOR 1254) | 31.8 | ug/kg | | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1260 (AROCLOR 1260) | 19.8 | ug/kg | | | | ✓ |
| SIB-SC-C18-1-2-07192022 | 22G0312-76 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW6020B | ARSENIC | 4.73 | mg/kg | D | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW6020B | COPPER | 55 | mg/kg | D | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW6020B | LEAD | 59.1 | mg/kg | D | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW6020B | ZINC | 225 | mg/kg | D | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW7471B | MERCURY | 0.206 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1248 (AROCLOR 1248) | 37.2 | ug/kg | | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1254 (AROCLOR 1254) | 111 | ug/kg | | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1260 (AROCLOR 1260) | 149 | ug/kg | | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.3 | ug/kg | D | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 176 | ug/kg | D | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 133 | ug/kg | D | DNR | EXC | |
| SIB-SC-C18-2-3-07192022 | 22G0312-77RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW6020B | ARSENIC | 3.09 | mg/kg | D | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW6020B | CADMIUM | 0.2 | mg/kg | D | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW6020B | COPPER | 26.5 | mg/kg | D | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW6020B | LEAD | 22 | mg/kg | D | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW6020B | ZINC | 93.3 | mg/kg | D | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW7471B | MERCURY | 0.172 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1248 (AROCLOR 1248) | 11.1 | ug/kg | | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1254 (AROCLOR 1254) | 34.2 | ug/kg | | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.7 | ug/kg | | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 16.6 | ug/kg | D J | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 53.5 | ug/kg | D | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 46.5 | ug/kg | D | DNR | EXC | |
| SIB-SC-C18-3-4-07192022 | 22G0312-78RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW6020B | ARSENIC | 2.95 | mg/kg | D | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW6020B | COPPER | 26.4 | mg/kg | D | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW6020B | LEAD | 10.1 | mg/kg | D | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW6020B | ZINC | 61.4 | mg/kg | D | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW7471B | MERCURY | 0.0717 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|------------------|------------------------------------|
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-4-5-07192022 | 22G0312-79 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW6020B | ARSENIC | 3.5 | mg/kg | D | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW6020B | COPPER | 37.9 | mg/kg | D | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW6020B | LEAD | 15.2 | mg/kg | D | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW6020B | ZINC | 79 | mg/kg | D | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW7471B | MERCURY | 0.106 | mg/kg | | J | MSLX,MSL,MSP,PDN | |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C18-5-6-07192022 | 22G0312-80 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | Cape Fear Analytical (CFA) |
| SDG | 22G0312 |
| HGL Reviewer | Ken Rapuano 7/3/2023 |
| QC Review | Justin Hersh 7/12/2023 |

General issues: The data validators were provided with an EDD that contained formatting errors and incorrect dilution factors, including incorrect dilution factor adjustments for sensitivity limits. The HGL reviewer transferred all qualification to a revised EDD produced using a corrected laboratory EDD delivered after the DV report was complete.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. EB02-07132022 (results reported in SDG 22G0258 is associated with all samples collected on 7/14/22 and EB03-07202022 (results reported in SDG 22G0343) is associated with all samples collected on 7/19/22. EB02-07132022 was free from all contamination with the exception of 0.000031 mg/L (0.031 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required. EB03-07202022 was free from contamination.

Additional formatting changes were made based on feedback from the HGL Database Manager, including populating all rows of the validated_yn field with "Y", moving the data validation reason codes from the approval_code field to the dqm_remark field, and ensuring all interpreted_qualifiers for non-qualified data were compatible with the original lab_qualifiers.

PCBs as Aroclors – 8082A

Surrogates: The DV report did not apply qualifiers to results if only one of the four surrogates (two per column) were out of control. HGL subsequently issued a consistency memorandum that allowed this practice, but established windows of +20% and –10% outside of which qualification would be required even for a single discrepancy. Surrogate DCB had a %R above the control limits on column 1 for samples SIB-SC-F08-1-2-07/14/2022, SIB-SC-G08-2-3-07/14/2022, SIB-SC-D19-1-2-07/19/2022, SIB-SC-D19-2-3-07/19/2022, SIB-SC-D17-1-2-07/19/2022, and SIB-SC-C18-2-3-07/19/2022; although this was the only one of four surrogate %Rs that were out of control, the %R was above the upper control limit by more than 20% for both samples. In accordance with the HGL Consistency Memorandum, **the detected results for Aroclor 1248, Aroclor 1254, and Aroclor 1260 reported from column 1 for samples SIB-SC-G08-2-3-07/14/2022, SIB-SC-D19-1-2-07/19/2022, SIB-SC-D19-2-3-07/19/2022, SIB-SC-D17-1-2-07/19/2022, and SIB-SC-C18-2-3-07/19/2022 should be qualified J-SSH.** All detected results reported for sample SIB-SC-F08-1-2-07/14/2022 are from a 25x diluted analysis and no qualification is required.

Surrogate DCB was not reported from column 1 for the analysis of several samples due to a matrix interference. The HGL reviewer examined the raw data and determined that no additional qualification was required.

LCS/LCSD: The DV report incorrectly identifies the preparation batch with the LCS/LCSD discrepancy for Aroclor 1260 as BKH0518; the correct batch id is BKH0516. The HGL reviewer confirmed that the validator applied a J qualifier and reason code LCP to the correct sample results.

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. Sample SIB-SC-F08-1-2-07/14/2022 was analyzed at a 5x dilution and at a 25x dilution. The 5x dilution had a high %R for DCB that was greater than 20% above the upper control limit. This surrogate was diluted out of the 25x dilution. In the judgment of the HGL reviewer, the 25x dilution is less likely to be affected by matrix effects; as the detected results in the two dilution levels are comparable, the HGL reviewer selected the 25x dilution results reported for this sample as the usable results for detections and the 5x dilution results as the usable results for non-detections. This reverses the usable results selected by the validators. **For sample SIB-SC-F08-1-2-07/14/2022, all detected results from the 5x dilution are qualified DNR-EXC and all non-detected results are usable without qualification; all non-detected results from the 25x dilution are qualified DNR-EXC and all detected results are usable without qualification.**
2. Sample FD-13-07/14/2022 was analyzed at a 5x dilution and at a 50x dilution. DCB was not reported from column 1 due to an interference. This surrogate was diluted out of the 50x dilution. The detected Aroclor 1260 in the 5x dilution is reported from column 2 and is associated with acceptable surrogate results for that column. The detected results for Aroclor 1248 and Aroclor 1254 are above the calibrated range in the 5x dilution and the results from the 50x dilution should be used. **For sample FD-13-07/14/2022, the detected results for Aroclor 1248 and Aroclor 1254 from the 5x dilution are qualified DNR-EXC and the detected Aroclor 1260 and all non-detected results are usable without qualification; the detected Aroclor 1260 result from the 25x dilution and all non-detected results from the 25x dilution are qualified DNR-EXC and the detected Aroclor 1248 and Aroclor 1254 results are usable without qualification.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|------------------------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| FD-13-07/14/2022 (5x dilution) | Aroclor 1260 | 760 | DNR | J | J | FDPR |
| | All non-detected results | varies | DNR | -- | U | U |
| FD-13-07/14/2022 (50x dilution) | Aroclor 1260 | 1240 | J | DNR | DNR | EXC |
| | All non-detected results | varies | -- | DNR | DNR | EXC |
| SIB-SC-F08-1-2-07/14/2022 (5x dilution) | All detected results | varies | -- | DNR | DNR | EXC |
| | All non-detected results | varies | DNR | -- | U | U |
| SIB-SC-F08-1-2-07/14/2022 (25x dilution) | All detected results | varies | DNR | -- | -- | -- |
| | All non-detected results (1) | varies | -- | DNR | DNR | EXC |
| SIB-SC-G08-2-3-07/14/2022 | Aroclor 1248 | 187 | J | J | J | SSH,LCSP |
| | Aroclor 1254 | 435 | J | J | J | SSH,LCSP |
| | Aroclor 1260 | 183 | J | J | J | SSH,LCSP |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|---------------------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-D19-1-2-07/19/2022 | Aroclor 1248 | 77.1 | J | J | J | SSH,LCSP |
| | Aroclor 1254 | 218 | J | J | J | SSH,LCSP |
| | Aroclor 1260 | 133 | J | J | J | SSH,LCSP |
| SIB-SC-D19-2-3-07/19/2022 | Aroclor 1248 | 95.7 | J | J | J | SSH,LCSP |
| | Aroclor 1254 | 297 | J | J | J | SSH,LCSP |
| | Aroclor 1260 | 159 | J | J | J | SSH,LCSP |
| SIB-SC-D17-1-2-07/19/2022 | Aroclor 1248 | 110 | J | J | J | SSH,LCSP |
| | Aroclor 1254 | 241 | J | J | J | SSH,LCSP |
| | Aroclor 1260 | 110 | J | J | J | SSH,LCSP |
| SIB-SC-C18-2-3-07/19/2022 | Aroclor 1248 | 37.2 | -- | J | J | SSH |
| | Aroclor 1254 | 111 | -- | J | J | SSH |
| | Aroclor 1260 | 149 | -- | J | J | SSH |
| 17 Samples | All results qualified DNR | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |

Metals – 6020B and 7471B

Holding Time: The mercury results are reported from extracts prepared 49 to 76 days from sampling; the narrative confirmed the samples were frozen to extend holding time. No qualification required.

Laboratory Duplicate: The laboratory duplicate for preparation batch BKI0669 was low-level and had a difference of 0.033 mg/kg, which is only slightly greater than the value of the PQL (0.0319 mg/kg). The DV report used $\pm 2 \times$ PQL as the control limit; in the judgment of the HGL reviewer, this discrepancy is nominal and no qualification is required.

The laboratory duplicate for preparation batch BKI0672 was low-level and had a difference of 0.066 mg/kg, which is only slightly greater than the value of the PQL (0.0423 mg/kg). The DV report used $\pm 2 \times$ PQL as the control limit; in the judgment of the HGL reviewer, the laboratory criteria of \pm PQL should be used. **All mercury results reported from batch BKI0672 should be qualified J-LDPA.**



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0348

July 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------------|------------|--------|-----|--------|---------|
| 22G0348 | SIB-SC-E17-1-2-07192022 | 22G0348-02 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E17-2-3-07192022 | 22G0348-03 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E17-3-4-07192022 | 22G0348-04 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E17-4-5-07192022 | 22G0348-05 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E17-5-6-07192022 | 22G0348-06 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-F25-1-2-07202022 | 22G0348-14 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-F25-2-3-07202022 | 22G0348-15 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-F25-3-4-07202022 | 22G0348-16 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-F25-4-5-07202022 | 22G0348-17 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-1-2-07202022 | 22G0348-20 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-2-3-07202022 | 22G0348-21 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-3-4-07202022 | 22G0348-22 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-4-5-07202022 | 22G0348-23 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-5-6-07202022 | 22G0348-24 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-6-7-07202022 | 22G0348-25 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-7-8-07202022 | 22G0348-26 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-8-9-07202022 | 22G0348-27 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-9-10-07202022 | 22G0348-28 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-10-11-07202022 | 22G0348-29 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-11-12-07202022 | 22G0348-30 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SE | ✓ | ✓ | ✓ |
| 22G0348 | FD-15-07/20/2022 | 22G0348-32 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-13-14-07202022 | 22G0348-33 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E19-1-2-07202022 | 22G0348-36 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E19-2-3-07202022 | 22G0348-37 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E19-3-4-07202022 | 22G0348-38 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E19-4-5-07202022 | 22G0348-39 | SE | ✓ | ✓ | ✓ |
| 22G0348 | SIB-SC-E19-5-6-07202022 | 22G0348-40 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0348 | 30 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

With the noted exception, the laboratory submitted all required deliverables for a compliance level review.

For quality control samples, BKG0596-MS1/MSD1, the summary forms in the laboratory report did not contain reported percent recovery (%R) or relative percent difference (RPD) values. The laboratory submitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

For most samples, the date suffix in the sample ID is expressed as DDMMYYYY instead of DD/MM/YYYY in the "sample_name" field. All sample IDs in the "sys_sample_code" field match the chain-of-custody.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB03-07202022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB03-07202022 was free from contamination.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD %R values. No action is taken if the concentration in the parent sample is greater than 4x the spike concentration. Precision is evaluated using the RPD values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample.

The following two samples were used for the MS/MSD analyses:

- SIB-SC-E20-3-4-07/20/2022
- SIB-SC-E20-13-14-07/20/2022

The following outliers were noted:

| PARENT SAMPLE | MS %R | MSD %R | RPD | QUALIFIER |
|---------------------------|-------|--------|------|-----------|
| SIB-SC-E20-3-4-07/20/2022 | OK | 179 | 42.1 | J-MSH,MSP |

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For several samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted. Field precision was acceptable:

- SIB-SC-E20-12-13-07/20/2022 & FD-15-07/20/2022

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD and SRM recoveries. With the noted exceptions, precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Results were qualified due to MS/MSD accuracy and precision outliers.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0348 | 30 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| 2 | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Method Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

For batch BKH0335, mercury was detected in the method blank. The mercury result for Sample SIB-SC-E20-14-14.8-07/20/2022 was flagged as not detected (U-MBL).

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB03-07202022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB03-07202022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For metals Batch BKH0769,

- Sample SIB-SC-E20-3-4-07/20/2022 was used for the MS/MSD analyses. The %R value for zinc was greater than the upper control limit in the MSD; all associated zinc results were estimated (J-MSH).

For metals Batch BKH0795,

- Sample SIB-SC-E17-1-2-07/19/2022 was used for the MS/MSD analyses. The %R values for lead were lower than the lower control limit in the MSD; all associated lead results were estimated (J-MSL).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 20%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For metals Batch GKH0795, Sample SIB-SC-E17-1-2-07/19/2022 was used for the duplicate analysis. The RPD value for lead was greater than the control limit; results in this batch were estimated (J-LPDR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

FD-15-07/20/2022 & SIB-SC-E20-12-13-07/20/2022

All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exceptions noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Data were qualified as not detected due to method blank contamination. Results were estimated based on MS/MSD recovery and laboratory duplicate RPD outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW6020B | ARSENIC | 6.82 | mg/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW6020B | COPPER | 85.6 | mg/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW6020B | LEAD | 89.1 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW6020B | ZINC | 283 | mg/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 215 | ug/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 443 | ug/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 242 | ug/kg | D | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-1-2-07192022 | 22G0348-02RE1 | SW7471B | MERCURY | 0.275 | mg/kg | | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW6020B | ARSENIC | 5.86 | mg/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW6020B | COPPER | 62.4 | mg/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW6020B | LEAD | 44.5 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW6020B | ZINC | 242 | mg/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 67.1 | ug/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | 22G0348-03RE1 | SW7471B | MERCURY | 0.0982 | mg/kg | | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW6020B | ARSENIC | 5.88 | mg/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW6020B | COPPER | 53.5 | mg/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW6020B | LEAD | 41.3 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW6020B | ZINC | 228 | mg/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.5 | ug/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 66.7 | ug/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 63.3 | ug/kg | D | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | 22G0348-04RE1 | SW7471B | MERCURY | 0.31 | mg/kg | | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW6020B | ARSENIC | 6.14 | mg/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW6020B | COPPER | 64.4 | mg/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW6020B | LEAD | 49.1 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW6020B | ZINC | 234 | mg/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 60.4 | ug/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 110 | ug/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 88.4 | ug/kg | D | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-4-5-07192022 | 22G0348-05RE1 | SW7471B | MERCURY | 0.212 | mg/kg | | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW6020B | ARSENIC | 6.08 | mg/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW6020B | COPPER | 70.6 | mg/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW6020B | LEAD | 53 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW6020B | ZINC | 264 | mg/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.6 | ug/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 129 | ug/kg | D | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-5-6-07192022 | 22G0348-06RE1 | SW7471B | MERCURY | 0.165 | mg/kg | | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW6020B | ARSENIC | 14.1 | mg/kg | D | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW6020B | COPPER | 162 | mg/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW6020B | LEAD | 163 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW6020B | ZINC | 245 | mg/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW7471B | MERCURY | 0.831 | mg/kg | B | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 104 | ug/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 208 | ug/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 150 | ug/kg | D | | | ✓ |
| SIB-SC-F25-1-2-07202022 | 22G0348-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW6020B | ARSENIC | 6.48 | mg/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW6020B | COPPER | 56.7 | mg/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW6020B | LEAD | 40.1 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW6020B | ZINC | 155 | mg/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW7471B | MERCURY | 0.571 | mg/kg | B | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 89.8 | ug/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-F25-2-3-07202022 | 22G0348-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW6020B | ARSENIC | 18.6 | mg/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW6020B | CADMIUM | 1.04 | mg/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW6020B | COPPER | 330 | mg/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW6020B | LEAD | 233 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW6020B | ZINC | 438 | mg/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW7471B | MERCURY | 2.1 | mg/kg | B D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 44.6 | ug/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 90.1 | ug/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 109 | ug/kg | D | | | ✓ |
| SIB-SC-F25-3-4-07202022 | 22G0348-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW6020B | ARSENIC | 11.6 | mg/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW6020B | COPPER | 152 | mg/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW6020B | LEAD | 47.3 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW6020B | ZINC | 193 | mg/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW7471B | MERCURY | 0.503 | mg/kg | B | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 61.9 | ug/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 82.1 | ug/kg | D | | | ✓ |
| SIB-SC-F25-4-5-07202022 | 22G0348-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW6020B | ARSENIC | 12.9 | mg/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW6020B | COPPER | 183 | mg/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW6020B | LEAD | 56.4 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW6020B | ZINC | 167 | mg/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW7471B | MERCURY | 0.584 | mg/kg | B | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 25.7 | ug/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 59.4 | ug/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.1 | ug/kg | D | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | 22G0348-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW6020B | ARSENIC | 12.6 | mg/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW6020B | COPPER | 161 | mg/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW6020B | LEAD | 69.5 | mg/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW6020B | ZINC | 393 | mg/kg | D | J | MSH | |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW7471B | MERCURY | 0.289 | mg/kg | B | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 321 | ug/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 203 | ug/kg | D | | | ✓ |
| SIB-SC-E20-1-2-07202022 | 22G0348-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW6020B | ARSENIC | 6.34 | mg/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW6020B | COPPER | 55.3 | mg/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW6020B | LEAD | 38.2 | mg/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW6020B | ZINC | 238 | mg/kg | D | J | MSH | |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW7471B | MERCURY | 0.28 | mg/kg | B | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.8 | ug/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 78.1 | ug/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 72 | ug/kg | D | | | ✓ |
| SIB-SC-E20-2-3-07202022 | 22G0348-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW6020B | ARSENIC | 5.51 | mg/kg | D | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW6020B | COPPER | 53.1 | mg/kg | D | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW6020B | LEAD | 35.9 | mg/kg | D | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW6020B | ZINC | 210 | mg/kg | D | J | MSH | |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW7471B | MERCURY | 0.212 | mg/kg | B | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 73.3 | ug/kg | D | J | MSH,MSP | |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 137 | ug/kg | D | J | MSH,MSP | |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 116 | ug/kg | D | J | MSH,MSP | |
| SIB-SC-E20-3-4-07202022 | 22G0348-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW6020B | ARSENIC | 5.26 | mg/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW6020B | COPPER | 49.6 | mg/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW6020B | LEAD | 33.3 | mg/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW6020B | ZINC | 214 | mg/kg | D | J | MSH | |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW7471B | MERCURY | 0.23 | mg/kg | B | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.5 | ug/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 220 | ug/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 164 | ug/kg | D | | | ✓ |
| SIB-SC-E20-4-5-07202022 | 22G0348-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW6020B | ARSENIC | 6.69 | mg/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW6020B | COPPER | 85 | mg/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW6020B | LEAD | 77.3 | mg/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW6020B | ZINC | 276 | mg/kg | D | J | MSH | |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW7471B | MERCURY | 0.766 | mg/kg | B | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 102 | ug/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 232 | ug/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 142 | ug/kg | D | | | ✓ |
| SIB-SC-E20-5-6-07202022 | 22G0348-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW6020B | ARSENIC | 5.73 | mg/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW6020B | COPPER | 56.6 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW6020B | LEAD | 41.2 | mg/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW6020B | ZINC | 179 | mg/kg | D | J | MSH | |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW7471B | MERCURY | 0.565 | mg/kg | B | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 36.9 | ug/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 99.8 | ug/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 153 | ug/kg | D | | | ✓ |
| SIB-SC-E20-6-7-07202022 | 22G0348-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW6020B | ARSENIC | 4.69 | mg/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW6020B | COPPER | 47.9 | mg/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW6020B | LEAD | 32.5 | mg/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW6020B | ZINC | 151 | mg/kg | D | J | MSH | |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW7471B | MERCURY | 0.188 | mg/kg | B | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.3 | ug/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 85 | ug/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 178 | ug/kg | D | | | ✓ |
| SIB-SC-E20-7-8-07202022 | 22G0348-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW6020B | ARSENIC | 6 | mg/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW6020B | COPPER | 60.2 | mg/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW6020B | LEAD | 40.8 | mg/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW6020B | ZINC | 174 | mg/kg | D | J | MSH | |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW7471B | MERCURY | 0.193 | mg/kg | B | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 52.3 | ug/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 104 | ug/kg | D | | | ✓ |
| SIB-SC-E20-8-9-07202022 | 22G0348-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW6020B | ARSENIC | 4.67 | mg/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW6020B | COPPER | 46.6 | mg/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW6020B | LEAD | 28 | mg/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW6020B | ZINC | 131 | mg/kg | D | J | MSH | |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW7471B | MERCURY | 0.409 | mg/kg | B | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 51.9 | ug/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.6 | ug/kg | D | | | ✓ |
| SIB-SC-E20-9-10-07202022 | 22G0348-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW6020B | ARSENIC | 3.67 | mg/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW6020B | CADMIUM | 0.19 | mg/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW6020B | COPPER | 33 | mg/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW6020B | LEAD | 16.7 | mg/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW6020B | ZINC | 92.9 | mg/kg | D | J | MSH | |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW7471B | MERCURY | 0.219 | mg/kg | B | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1254 (AROCLOR 1254) | 32.2 | ug/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 34.1 | ug/kg | D | | | ✓ |
| SIB-SC-E20-10-11-07202022 | 22G0348-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW6020B | ARSENIC | 2.95 | mg/kg | D | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW6020B | COPPER | 23.5 | mg/kg | D | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW6020B | LEAD | 8.59 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-----------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW6020B | ZINC | 65.2 | mg/kg | D | J | MSH | |
| SIB-SC-E20-11-12-07202022 | 22G0348-30 | SW7471B | MERCURY | 0.0596 | mg/kg | B | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.8 | ug/kg | | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 8.6 | ug/kg | | | | ✓ |
| SIB-SC-E20-11-12-07202022 | 22G0348-30RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW6020B | ARSENIC | 2.92 | mg/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW6020B | CADMIUM | 0.14 | mg/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW6020B | COPPER | 23.3 | mg/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW6020B | LEAD | 14.1 | mg/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW6020B | ZINC | 67.7 | mg/kg | D | J | MSH | |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW7471B | MERCURY | 0.164 | mg/kg | B | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1254 (AROCLOR 1254) | 25 | ug/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1260 (AROCLOR 1260) | 33.2 | ug/kg | D | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | 22G0348-31 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW6020B | ARSENIC | 3.3 | mg/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW6020B | CADMIUM | 0.14 | mg/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW6020B | COPPER | 24.7 | mg/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW6020B | LEAD | 13.3 | mg/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW6020B | ZINC | 70.6 | mg/kg | D | J | MSH | |
| FD-15-07/20/2022 | 22G0348-32 | SW7471B | MERCURY | 0.165 | mg/kg | B | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1254 (AROCOLOR 1254) | 24.6 | ug/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1260 (AROCOLOR 1260) | 29 | ug/kg | D | | | ✓ |
| FD-15-07/20/2022 | 22G0348-32 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW6020B | ARSENIC | 2.65 | mg/kg | D | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW6020B | COPPER | 20.1 | mg/kg | D | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW6020B | LEAD | 4.65 | mg/kg | D | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW6020B | ZINC | 52.6 | mg/kg | D | J | MSH | |
| SIB-SC-E20-13-14-07202022 | 22G0348-33 | SW7471B | MERCURY | 0.0474 | mg/kg | B | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-13-14-07202022 | 22G0348-33RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW6020B | ARSENIC | 3.09 | mg/kg | D | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW6020B | COPPER | 24.1 | mg/kg | D | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW6020B | LEAD | 3.76 | mg/kg | D | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW6020B | ZINC | 55.8 | mg/kg | D | J | MSH | |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34 | SW7471B | MERCURY | 0.0257 | mg/kg | B | U | MBL | |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | 22G0348-34RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW6020B | ARSENIC | 6.05 | mg/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW6020B | COPPER | 82.3 | mg/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW6020B | LEAD | 63.9 | mg/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW6020B | ZINC | 266 | mg/kg | D | J | MSH | |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW7471B | MERCURY | 0.343 | mg/kg | B | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 367 | ug/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 196 | ug/kg | D | | | ✓ |
| SIB-SC-E19-1-2-07202022 | 22G0348-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW6020B | ARSENIC | 6.26 | mg/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW6020B | COPPER | 56.3 | mg/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW6020B | LEAD | 38.1 | mg/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW6020B | ZINC | 258 | mg/kg | D | J | MSH | |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW7471B | MERCURY | 0.227 | mg/kg | B | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.2 | ug/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 95.8 | ug/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 121 | ug/kg | D | | | ✓ |
| SIB-SC-E19-2-3-07202022 | 22G0348-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW6020B | ARSENIC | 6.78 | mg/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW6020B | COPPER | 68.3 | mg/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW6020B | LEAD | 47.6 | mg/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW6020B | ZINC | 258 | mg/kg | D | J | MSH | |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW7471B | MERCURY | 0.392 | mg/kg | B | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1248 (AROCLOR 1248) | 83 | ug/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 211 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1260 (AROCOLOR 1260) | 246 | ug/kg | D | | | ✓ |
| SIB-SC-E19-3-4-07202022 | 22G0348-38 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW6020B | ARSENIC | 6.12 | mg/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW6020B | COPPER | 55.8 | mg/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW6020B | LEAD | 37.9 | mg/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW6020B | ZINC | 235 | mg/kg | D | J | MSH | |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW7471B | MERCURY | 0.255 | mg/kg | B | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1248 (AROCOLOR 1248) | 46.7 | ug/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1254 (AROCOLOR 1254) | 74.7 | ug/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1260 (AROCOLOR 1260) | 77.5 | ug/kg | D | | | ✓ |
| SIB-SC-E19-4-5-07202022 | 22G0348-39 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW6020B | ARSENIC | 5.46 | mg/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW6020B | COPPER | 58.4 | mg/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW6020B | LEAD | 48.8 | mg/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW6020B | ZINC | 225 | mg/kg | D | J | MSH | |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW7471B | MERCURY | 0.211 | mg/kg | B | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1248 (AROCOLOR 1248) | 54.5 | ug/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1254 (AROCOLOR 1254) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1260 (AROCOLOR 1260) | 124 | ug/kg | D | | | ✓ |
| SIB-SC-E19-5-6-07202022 | 22G0348-40 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E17-3-4-07192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 11.3 | pg/g | | | | ✓ |
| SIB-SC-E19-2-3-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 10.9 | pg/g | | | | ✓ |
| SIB-SC-E19-3-4-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 5 | pg/g | | | | ✓ |
| SIB-SC-E19-5-6-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 38.2 | pg/g | | | | ✓ |
| SIB-SC-E20-10-11-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.4 | pg/g | | | | ✓ |
| SIB-SC-E20-2-3-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 11.9 | pg/g | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------------|--------|--------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E20-4-5-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 34.6 | pg/g | | | | ✓ |
| SIB-SC-E20-5-6-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 6.1 | pg/g | | | | ✓ |
| SIB-SC-E20-7-8-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 8.5 | pg/g | | | | ✓ |
| SIB-SC-E20-8-9-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 6.6 | pg/g | | | | ✓ |
| SIB-SC-F25-2-3-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 17.8 | pg/g | | | | ✓ |
| SIB-SC-F25-3-4-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 24.7 | pg/g | | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 20.3 | pg/g | A | | | ✓ |
| SIB-SC-E17-1-2-07192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.6 | pg/g | | | | ✓ |
| SIB-SC-E17-4-5-07192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 3.8 | pg/g | | | | ✓ |
| SIB-SC-E20-14-14.8-07/20/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.27 | pg/g | | | | ✓ |
| SIB-SC-E17-2-3-07192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.4 | pg/g | | | | ✓ |
| SIB-SC-E17-5-6-07192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 39.6 | pg/g | | | | ✓ |
| SIB-SC-E20-1-2-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.5 | pg/g | | | | ✓ |
| SIB-SC-E19-4-5-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.1 | pg/g | | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 3.6 | pg/g | | | | ✓ |
| SIB-SC-E20-6-7-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 8 | pg/g | | | | ✓ |
| SIB-SC-E20-9-10-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 10 | pg/g | | | | ✓ |
| SIB-SC-F25-4-5-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 7.2 | pg/g | | | | ✓ |
| SIB-SC-E19-1-2-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 28.6 | pg/g | | | | ✓ |
| SIB-SC-E20-11-12-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.5 | pg/g | | | | ✓ |
| SIB-SC-E20-13-14-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.68 | pg/g | | | | ✓ |
| SIB-SC-E20-3-4-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 3.2 | pg/g | | | | ✓ |
| SIB-SC-F25-1-2-07202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 39.6 | pg/g | | | | ✓ |
| SIB-SC-E17-3-4-07192022 | Calc | CALC | SUM OF AROCLORS | 194 | ug/kg | | | | ✓ |
| SIB-SC-E19-2-3-07202022 | Calc | CALC | SUM OF AROCLORS | 291 | ug/kg | | | | ✓ |
| SIB-SC-E19-3-4-07202022 | Calc | CALC | SUM OF AROCLORS | 546 | ug/kg | | | | ✓ |
| SIB-SC-E19-5-6-07202022 | Calc | CALC | SUM OF AROCLORS | 298 | ug/kg | | | | ✓ |
| SIB-SC-E20-10-11-07202022 | Calc | CALC | SUM OF AROCLORS | 88.7 | ug/kg | | | | ✓ |
| SIB-SC-E20-2-3-07202022 | Calc | CALC | SUM OF AROCLORS | 220 | ug/kg | | | | ✓ |
| SIB-SC-E20-4-5-07202022 | Calc | CALC | SUM OF AROCLORS | 485 | ug/kg | | | | ✓ |
| SIB-SC-E20-5-6-07202022 | Calc | CALC | SUM OF AROCLORS | 495 | ug/kg | | | | ✓ |
| SIB-SC-E20-7-8-07202022 | Calc | CALC | SUM OF AROCLORS | 312 | ug/kg | | | | ✓ |
| SIB-SC-E20-8-9-07202022 | Calc | CALC | SUM OF AROCLORS | 179 | ug/kg | | | | ✓ |
| SIB-SC-F25-2-3-07202022 | Calc | CALC | SUM OF AROCLORS | 224 | ug/kg | | | | ✓ |
| SIB-SC-F25-3-4-07202022 | Calc | CALC | SUM OF AROCLORS | 262 | ug/kg | | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | Calc | CALC | SUM OF AROCLORS | 148 | ug/kg | | | | ✓ |
| SIB-SC-E17-1-2-07192022 | Calc | CALC | SUM OF AROCLORS | 919 | ug/kg | | | | ✓ |
| SIB-SC-E17-4-5-07192022 | Calc | CALC | SUM OF AROCLORS | 277 | ug/kg | | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------------|--------|--------|-------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E20-14-14.8-07/20/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-E17-2-3-07192022 | Calc | CALC | SUM OF AROCLORS | 349 | ug/kg | | | | ✓ |
| SIB-SC-E17-5-6-07192022 | Calc | CALC | SUM OF AROCLORS | 329 | ug/kg | | | | ✓ |
| SIB-SC-E20-1-2-07202022 | Calc | CALC | SUM OF AROCLORS | 648 | ug/kg | | | | ✓ |
| SIB-SC-E19-4-5-07202022 | Calc | CALC | SUM OF AROCLORS | 217 | ug/kg | | | | ✓ |
| SIB-SC-E20-12-13-07/20/2022 | Calc | CALC | SUM OF AROCLORS | 80.6 | ug/kg | | | | ✓ |
| SIB-SC-E20-6-7-07202022 | Calc | CALC | SUM OF AROCLORS | 308 | ug/kg | | | | ✓ |
| SIB-SC-E20-9-10-07202022 | Calc | CALC | SUM OF AROCLORS | 161 | ug/kg | | | | ✓ |
| SIB-SC-F25-4-5-07202022 | Calc | CALC | SUM OF AROCLORS | 166 | ug/kg | | | | ✓ |
| SIB-SC-E19-1-2-07202022 | Calc | CALC | SUM OF AROCLORS | 705 | ug/kg | | | | ✓ |
| SIB-SC-E20-11-12-07202022 | Calc | CALC | SUM OF AROCLORS | 20 | ug/kg | | | | ✓ |
| SIB-SC-E20-13-14-07202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-E20-3-4-07202022 | Calc | CALC | SUM OF AROCLORS | 345 | ug/kg | | | | ✓ |
| SIB-SC-F25-1-2-07202022 | Calc | CALC | SUM OF AROCLORS | 481 | ug/kg | | | | ✓ |
| SIB-SC-F25-2-3-07202022 | Calc | CALC | SUM PCB CONGENERS | 399000 | pg/g | | | | ✓ |
| SIB-SC-F25-3-4-07202022 | Calc | CALC | SUM PCB CONGENERS | 267000 | pg/g | | | | ✓ |
| SIB-SC-F25-5-5.6-07202022 | Calc | CALC | SUM PCB CONGENERS | 176000 | pg/g | | | | ✓ |
| SIB-SC-F25-4-5-07202022 | Calc | CALC | SUM PCB CONGENERS | 244000 | pg/g | | | | ✓ |
| SIB-SC-F25-1-2-07202022 | Calc | CALC | SUM PCB CONGENERS | 1E+06 | pg/g | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0348 |
| HGL Reviewer | Ken Rapuano 8/8/2023 |
| HGL QC Review | Justin Hersh 8/18/2023 |

General issues: The laboratory hardcopy reports use the DoD qualification conventions and report ND results as <#, where # is the LOD. The HGL reviewer confirmed that the EDD reports the MDL in the reporting_detection_field in accordance with the project data reporting conventions.

The DV report indicated that the associated rinse blanks EB01-07/12/2022 and EB02-07/13/2022 were free from all contamination; however, both rinse blanks were contaminated with 0.000026 mg/L (0.026 µg/L) and 0.000031 mg/L (0.031 µg/L) of mercury, respectively. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with both EBs and in the judgment of the HGL reviewer, the detected mercury results in the EBs represent laboratory contamination associated with aqueous sample preparation and are not applicable to sediment samples. No additional qualification is required.

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for most samples; although this was the only one of four surrogate %Rs that were out of control, the %R discrepancies for samples SIB-SC-E20-1-2-07/20/2022 and SIB-SC-E20-6-7-07/20/2022 were above the upper control limit by more than 20% and in accordance with the HGL Consistency Memorandum, all detected results from column 1 for this samples with a surrogate discrepancy be qualified J-SSH (unless the dilution factor is >5).

MS/MSDs: The validation report identifies the MSD %R and RPD discrepancies but does not identify the affected analyte. The discrepancies are for Aroclor 1260; the HGL reviewer confirmed that the detected results for analytes associated with Aroclor 1260 discrepancies were qualified J-MSH,MSP in the EDD.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E20-1-2-07/20/2022 | Aroclor 1248 | 105 | -- | J | J | SSH |
| | Aroclor 1254 | 321 | -- | J | J | SSH |
| | Aroclor 1260 | 203 | -- | J | J | SSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E20-6-7-07/20/2022 | Aroclor 1248 | 36.9 | -- | J | J | SSH |
| | Aroclor 1254 | 99.8 | -- | J | J | SSH |
| | Aroclor 1260 | 153 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0366

January 20, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0366 | SIB-SC-F20-1-2-07212022 | 22G0366-02 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F20-2-3-07212022 | 22G0366-03 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F20-3-4-07212022 | 22G0366-04 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F20-4-5-07212022 | 22G0366-05 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F20-5-6-07212022 | 22G0366-06 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SE | ✓ | ✓ | ✓ |
| 22G0366 | FD-16-07/21/2022 | 22G0366-10 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F18-2-3-07212022 | 22G0366-11 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F18-3-4-07212022 | 22G0366-12 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F18-4-5-07212022 | 22G0366-13 | SE | ✓ | ✓ | ✓ |
| 22G0366 | SIB-SC-F18-5-6-07212022 | 22G0366-14 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0366 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD percent recovery (%R) values. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ-MSL). Only the associated positive results are estimated (J-MSH) if the %R values indicate a potential high bias. In cases where one outlier is less than the lower control limit and one outlier is greater than the upper control limit, no bias is indicated. If the RPD values indicate uncertainty, associated positive results are estimated (J-MSP).

Two sets of MS/MSDs were analyzed by the laboratory. With the noted exceptions, %R values were within the control limits.

| SAMPLE ID | ANALYTE | MS %R | MSD %R | QUALIFIERS ASSIGNED |
|---------------------------|---------|-------|--------|---------------------|
| SIB-SC-F18-2-3-07/21/2022 | AR1260 | High | High | J-MSH |
| SIB-SC-F20-3-4-07/21/2022 | AR1016 | Low | OK | None |
| | AR1260 | Low | Low | J/UJ-MSL |

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-F20-1-2-07/21/2022
- SIB-SC-F20-07/21/2022
- SIB-SC-F20-3-4-07/21/2022
- SIB-SC-F20-3-4-07/21/2022 MS/MSD

Field Duplicates

Samples SIB-SC-F18-1-2-07/21/2022 & FD-16-07/21/2022 were submitted as field duplicates. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Data were estimated based on MS/MSD accuracy outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0366 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values were within the control limits for all values.

The following analytes were qualified in one or more samples based on %R outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0378, MS/MSD samples were analyzed using Sample SIB-SC-F18-2-3-07212022. Mercury recoveries were less than the lower control limit; all sample results in this batch were estimated (J-MSL).

For Batch BKI0029, MS/MSD samples were analyzed using Sample SIB-SC-F18-2-3-07212022. The MS recovery value for copper was less than the lower control limit and was in control in the associated MSD sample; no data were qualified for a single outlier. The MS/MSD recoveries for lead were greater than the upper control limit; associated detected results were estimated (J-MSH). The MS/MSD recoveries for zinc were less than the lower control limit; associated results were estimated (J-MSL).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0378, Sample SIB-SC-F18-2-3-07212022 was used for the lab duplicate. The RPD value for mercury was greater than the control limit; results in this batch were estimated (J-LDPR).

For Batch BKI0029, Sample SIB-SC-F18-2-3-07212022 was used for the lab duplicate. The RPD values for lead, arsenic, and zinc were greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-F18-1-2-07/21/2022 & FD-16-07/21/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy outliers as well as laboratory duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW6020B | ARSENIC | 10.8 | mg/kg | D | J | LDPR | |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW6020B | COPPER | 195 | mg/kg | D | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW6020B | LEAD | 67.6 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW6020B | ZINC | 423 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW7471B | MERCURY | 0.101 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 37.3 | ug/kg | D | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 103 | ug/kg | D | | | ✓ |
| SIB-SC-F20-1-2-07212022 | 22G0366-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW6020B | ARSENIC | 11.8 | mg/kg | D | J | LDPR | |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW6020B | CADMIUM | 0.82 | mg/kg | D | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW6020B | COPPER | 282 | mg/kg | D | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW6020B | LEAD | 96.1 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW6020B | ZINC | 494 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW7471B | MERCURY | 0.4 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 66.2 | ug/kg | D | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 193 | ug/kg | D | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 166 | ug/kg | D | | | ✓ |
| SIB-SC-F20-2-3-07212022 | 22G0366-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW6020B | ARSENIC | 6.76 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW6020B | COPPER | 169 | mg/kg | D | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW6020B | LEAD | 103 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW6020B | ZINC | 334 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04 | SW7471B | MERCURY | 0.294 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | MSL | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | UJ | MSL | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1254 (AROCLOR 1254) | 699 | ug/kg | D | J | MSL | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1260 (AROCLOR 1260) | 368 | ug/kg | D | J | MSL | |
| SIB-SC-F20-3-4-07212022 | 22G0366-04RE2 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | MSL | |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW6020B | ARSENIC | 2.68 | mg/kg | D | J | LDPR | |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW6020B | COPPER | 25.3 | mg/kg | D | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW6020B | LEAD | 8.08 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW6020B | ZINC | 59.9 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW7471B | MERCURY | 0.0218 | mg/kg | J | J | MSL,LDPR | |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 41.5 | ug/kg | D | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-4-5-07212022 | 22G0366-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW6020B | ARSENIC | 2.28 | mg/kg | D | J | LDPR | |
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW6020B | COPPER | 18.1 | mg/kg | D | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW6020B | LEAD | 3.05 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW6020B | ZINC | 44.2 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F20-5-6-07212022 | 22G0366-06 | SW7471B | MERCURY | 0.0164 | mg/kg | J | J | MSL,LDPR | |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F20-5-6-07212022 | 22G0366-06RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW6020B | ARSENIC | 7.27 | mg/kg | D | J | LDPR | |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW6020B | COPPER | 76.7 | mg/kg | D | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW6020B | LEAD | 43.1 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW6020B | ZINC | 268 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW7471B | MERCURY | 0.25 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 63.3 | ug/kg | D | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 100 | ug/kg | D | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-F18-1-2-07/21/2022 | 22G0366-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW6020B | ARSENIC | 7.46 | mg/kg | D | J | LDPR | |
| FD-16-07/21/2022 | 22G0366-10 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW6020B | COPPER | 75.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| FD-16-07/21/2022 | 22G0366-10 | SW6020B | LEAD | 43.5 | mg/kg | D | J | MSH,LDPR | |
| FD-16-07/21/2022 | 22G0366-10 | SW6020B | ZINC | 245 | mg/kg | D | J | MSL,LDPR | |
| FD-16-07/21/2022 | 22G0366-10 | SW7471B | MERCURY | 0.248 | mg/kg | | J | MSL,LDPR | |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 58.3 | ug/kg | D | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 91.6 | ug/kg | D | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 120 | ug/kg | D | | | ✓ |
| FD-16-07/21/2022 | 22G0366-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW6020B | ARSENIC | 6.92 | mg/kg | D | J | LDPR | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW6020B | COPPER | 85.2 | mg/kg | D | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW6020B | LEAD | 58.7 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW6020B | ZINC | 285 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW7471B | MERCURY | 0.378 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 69.8 | ug/kg | D | J | MSH | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 125 | ug/kg | D | J | MSH | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 142 | ug/kg | D | J | MSH | |
| SIB-SC-F18-2-3-07212022 | 22G0366-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW6020B | ARSENIC | 7 | mg/kg | D | J | LDPR | |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW6020B | COPPER | 67.8 | mg/kg | D | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW6020B | LEAD | 45.9 | mg/kg | D | J | MSH,LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW6020B | ZINC | 269 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW7471B | MERCURY | 0.302 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 59.7 | ug/kg | D | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 83 | ug/kg | D | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 89.4 | ug/kg | D | | | ✓ |
| SIB-SC-F18-3-4-07212022 | 22G0366-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW6020B | ARSENIC | 6.08 | mg/kg | D | J | LDPR | |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW6020B | COPPER | 119 | mg/kg | D | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW6020B | LEAD | 134 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW6020B | ZINC | 280 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW7471B | MERCURY | 0.258 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.9 | ug/kg | D | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 148 | ug/kg | D | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 96.7 | ug/kg | D | | | ✓ |
| SIB-SC-F18-4-5-07212022 | 22G0366-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW6020B | ARSENIC | 4.4 | mg/kg | D | J | LDPR | |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW6020B | CADMIUM | 0.21 | mg/kg | D | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW6020B | COPPER | 69.1 | mg/kg | D | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW6020B | LEAD | 100 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW6020B | ZINC | 148 | mg/kg | D | J | MSL,LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW7471B | MERCURY | 0.256 | mg/kg | | J | MSL,LDPR | |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 45 | ug/kg | D | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 88.3 | ug/kg | D | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 51.4 | ug/kg | D | | | ✓ |
| SIB-SC-F18-5-6-07212022 | 22G0366-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0366 |
| HGL Reviewer | Ken Rapuano 7/3/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EB associated with the field samples in this SDG were not provided to the validators. EB04-07212022 (results reported in SDG 22G0343) is associated with all samples reported in this SDG. EB04-07212022 was free from contamination and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer moved any reason codes from the approval_code column to the dqm_remark column and updated all validated_yn cells to "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for sample SIB-SC-F20-2-3-07/21/2022; although this was the only one of four surrogate %Rs that were out of control, the %R discrepancy was above the upper control limit by more than 20% and in accordance with the HGL Consistency Memorandum, all detected results from column 1 for this sample should be qualified J-SSH.

MS/MSDs: The DV report did not note that the %R for Aroclor 1260 in the MS and MSD performed on sample SIB-SC-F20-3-4-07/21/2022 were extremely low (<20%) and the validator applied a UJ qualifier to associated non-detected results instead of an R qualifier. The sample concentration is 3.7x the spike concentration. Although the sample concentration is not >4x the spike concentration, the high sample concentration relative to the spike concentration could have an effect on the %Rs, and in the judgment of the HGL reviewer the qualifier of UJ is appropriate and no additional qualification is required.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F20-2-3-07/21/2022 | Aroclor 1248 | 66.2 | -- | J | J | SSH |
| | Aroclor 1254 | 193 | -- | J | J | SSH |
| | Aroclor 1260 | 166 | -- | J | J | SSH |

Metals – 6020B and 7471B

Standard Reference Material: The validation report did not note that the mercury SRM for batch BKH0378 was recovered slightly above the upper control limit. The %R was 141% and the UCL is 140%. In the judgment of the HGL reviewer, this discrepancy is nominal and no additional qualification is required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0368

April 3, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0368 | SIB-SC-D06-1-2-07212022 | 22G0368-01 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-D06-2-3-07212022 | 22G0368-02 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-D06-3-4-07212022 | 22G0368-03 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-D06-4-5-07212022 | 22G0368-04 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-D06-5-6-07212022 | 22G0368-05 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-C06-1-2-07222022 | 22G0368-16 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-C06-2-3-07222022 | 22G0368-17 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-C06-3-4-07222022 | 22G0368-18 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-C06-4-5-07222022 | 22G0368-19 | SE | ✓ | ✓ | ✓ |
| 22G0368 | SIB-SC-C06-5-6-07222022 | 22G0368-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0368 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Sample SIB-SC-D06-1-2-07/21/2022, the percent recovery (%R) value for decachlorobiphenyl (DCBP) was greater than the upper control limit on column 1. The %R value for DCBP was within the control limit on column 2, and the %R values for tetrachloro-m-xylene (TCMX) were within the control limits on both columns; no qualifiers were assigned.

Field Duplicates

No field duplicates were submitted.

Reported Results

The laboratory analyzed and reported several samples at two dilutions due to the sample matrix and/or internal standard outliers. In these cases, results from one of the dilutions was qualified as do-not-report (DNR-VJ) to indicate which of the two results should not be used. For a Stage 2A compliance screening, internal standard information is not submitted or evaluated. Information provided in the laboratory narrative is summarized below. No qualifiers were added for internal standard outliers.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|---------------------------|----------|-----------|---------------------------------|
| SIB-SC-D06-4-5-07/21/2022 | 1x | None | IS outlier, both columns |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-D06-5-6-07/21/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C06-1-2-07/22/2022 | 1x | None | IS outlier, one column |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C06-2-3-07/22/2022 | 1x | None | IS outlier, one column |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C06-3-4-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C06-4-5-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C06-5-6-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |

Reporting Limits

Some samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

Results from the diluted analyses of some samples were qualified as do-not-report (DNR). These results should not be used.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0368 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| 2 | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is

qualified as not detected (U). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J) and non-detects are estimated (UJ) to indicate a potential low bias.

For batch BKH0335, mercury was detected in the method blank. The mercury result for Sample SIB-SC-D06-5-6-07/21/2022 was flagged as not detected (U-MBL).

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). For %R values less than 30%, indicating an extreme low bias, associated results are estimated (J/UJ-MSLX). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0335, MS/MSD samples were analyzed using Sample SIB-SC-D06-1-2-07212022. The mercury MSD %R value was greater than the upper control limit and was in control in the associated MS sample; all detected sample results were estimated (J-MSH).

For Batch BKH0795, batch QC was performed for the method 6020 analyses. Accuracy was assessed using the laboratory control sample and precision was not evaluated.

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0795, batch QC was performed for the laboratory duplicate for the method 6020 analyses. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD and laboratory duplicate RPD values.

Data were qualified as not detected due to method blank contamination. Results were estimated due to a matrix spike recovery outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles >5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW6020B | ARSENIC | 4.9 | mg/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW6020B | CADMIUM | 0.26 | mg/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW6020B | COPPER | 37.5 | mg/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW6020B | LEAD | 26 | mg/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW6020B | ZINC | 109 | mg/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW7471B | MERCURY | 0.34 | mg/kg | B | J | MSH | |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 20.9 | ug/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 69.8 | ug/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 72.9 | ug/kg | D | | | ✓ |
| SIB-SC-D06-1-2-07212022 | 22G0368-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW6020B | ARSENIC | 4.97 | mg/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW6020B | CADMIUM | 0.31 | mg/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW6020B | COPPER | 39.7 | mg/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW6020B | LEAD | 25.4 | mg/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW6020B | ZINC | 116 | mg/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW7471B | MERCURY | 0.34 | mg/kg | B | J | MSH | |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 14.1 | ug/kg | D J | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 48.2 | ug/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 47.1 | ug/kg | D | | | ✓ |
| SIB-SC-D06-2-3-07212022 | 22G0368-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW6020B | ARSENIC | 4.63 | mg/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW6020B | COPPER | 32.7 | mg/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW6020B | LEAD | 18 | mg/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW6020B | ZINC | 98.2 | mg/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW7471B | MERCURY | 0.227 | mg/kg | B | J | MSH | |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 12.7 | ug/kg | D J | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 46.2 | ug/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 48.3 | ug/kg | D | | | ✓ |
| SIB-SC-D06-3-4-07212022 | 22G0368-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW6020B | ARSENIC | 4.3 | mg/kg | D | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW6020B | CADMIUM | 0.15 | mg/kg | D | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW6020B | COPPER | 25.8 | mg/kg | D | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW6020B | LEAD | 16.2 | mg/kg | D | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW6020B | ZINC | 80.1 | mg/kg | D | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW7471B | MERCURY | 0.154 | mg/kg | B | J | MSH | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 11.6 | ug/kg | D J | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 12.8 | ug/kg | D J | DNR | EXC | |
| SIB-SC-D06-4-5-07212022 | 22G0368-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3.5 | ug/kg | J | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 8.9 | ug/kg | | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 12.2 | ug/kg | | | | ✓ |
| SIB-SC-D06-4-5-07212022 | 22G0368-04RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW6020B | ARSENIC | 3.85 | mg/kg | D | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW6020B | COPPER | 17.4 | mg/kg | D | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW6020B | LEAD | 3.11 | mg/kg | D | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW6020B | ZINC | 44.4 | mg/kg | D | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW7471B | MERCURY | 0.0129 | mg/kg | B J | U | MBL | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D06-5-6-07212022 | 22G0368-05RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW6020B | ARSENIC | 3.82 | mg/kg | D | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW6020B | COPPER | 38.8 | mg/kg | D | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW6020B | LEAD | 70.5 | mg/kg | D | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW6020B | ZINC | 129 | mg/kg | D | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW7471B | MERCURY | 0.29 | mg/kg | B | J | MSH | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1.8 | ug/kg | J | | | ✓ |
| SIB-SC-C06-1-2-07222022 | 22G0368-16RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW6020B | ARSENIC | 4.49 | mg/kg | D | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW6020B | CADMIUM | 0.2 | mg/kg | D | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW6020B | COPPER | 42.6 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW6020B | LEAD | 23 | mg/kg | D | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW6020B | ZINC | 102 | mg/kg | D | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW7471B | MERCURY | 0.205 | mg/kg | B | J | MSH | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-2-3-07222022 | 22G0368-17RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW6020B | ARSENIC | 3.68 | mg/kg | D | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW6020B | COPPER | 29.3 | mg/kg | D | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW6020B | LEAD | 17.2 | mg/kg | D | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW6020B | ZINC | 77.8 | mg/kg | D | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW7471B | MERCURY | 0.201 | mg/kg | B | J | MSH | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-3-4-07222022 | 22G0368-18RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW6020B | ARSENIC | 3.17 | mg/kg | D | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW6020B | COPPER | 29.8 | mg/kg | D | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW6020B | LEAD | 5.95 | mg/kg | D | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW6020B | ZINC | 57.3 | mg/kg | D | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW7471B | MERCURY | 0.0488 | mg/kg | B | J | MSH | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-4-5-07222022 | 22G0368-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-4-5-07222022 | 22G0368-19RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW6020B | ARSENIC | 2.9 | mg/kg | D | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW6020B | COPPER | 31.2 | mg/kg | D | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW6020B | LEAD | 5.48 | mg/kg | D | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW6020B | ZINC | 58.8 | mg/kg | D | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW7471B | MERCURY | 0.0382 | mg/kg | B | J | MSH | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C06-5-6-07222022 | 22G0368-20RE1 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0368 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/11/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB04-07/21/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0343. This EB was free from all contamination.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator incorrectly changed the “detected” field from “Y” to “N” for the DNR-EXC results even if the original result was reported qualified U by the laboratory. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator. The “detected” field should be changed from N to Y for the PCB-1254 and PCB-1260 results reported from the 5x dilution of sample SIB-SC-D06-4-5-07/21/2022.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---|--|------------------|---------------------|--|--------------------------------|----------------------------|
| SIB-SC-D06-4-5-07/21/2022 (5x diluted results) | All results except PCB-1254 and PCB-1260 | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| | PCB-1254 and PCB-1260 | varies | DNR | Change “reportable_result” from “Yes” to “No” Change “detected” from “Y” to “N” | | |
| SIB-SC-D06-5-6-07/21/2022 (5x diluted results) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-C06-1-2-07/22/2022 (5x diluted results) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---|-------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-C06-2-3-07/22/2022 (5x diluted results) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |
| SIB-SC-C06-3-4-07/22/2022 (5x diluted results) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |
| SIB-SC-C06-4-5-07/22/2022 (5x diluted results) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |
| SIB-SC-C06-5-6-07/22/2022 (5x diluted results) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |

Metals – 6020B and 7471B

No additional issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0370

April 3, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0370 | SIB-SC-B08-1-2-07222022 | 22G0370-11 | SE | ✓ | ✓ | ✓ |
| 22G0370 | SIB-SC-B08-2-3-07222022 | 22G0370-12 | SE | ✓ | ✓ | ✓ |
| 22G0370 | SIB-SC-B08-3-4-07222022 | 22G0370-13 | SE | ✓ | ✓ | ✓ |
| 22G0370 | SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SE | ✓ | ✓ | ✓ |
| 22G0370 | FD-17-07/22//2022 | 22G0370-15 | SE | ✓ | ✓ | ✓ |
| 22G0370 | SIB-SC-B08-5-6-07222022 | 22G0370-16 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0370 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | ✓ | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-B08-4-5-07/22/2022 and FD-17-07/22/2022, were submitted. Field precision was acceptable.

Reported Results

The laboratory initially analyzed all samples at a 5x dilution due to the sample matrix. There were no positive results in any of the samples; therefore, all were reanalyzed at a 1x dilution. Results for both analyses were reported. The results from the 5x dilutions were qualified as do-not-report (DNR-EXC) to indicate which of the two results should not be used.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|---------------------------|----------|-----------|---------------------------------|
| SIB-SC-B08-1-2-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B08-2-3-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B08-3-4-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B08-4-5-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| FD-17-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B08-5-6-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Results from the diluted analyses were qualified as do-not-report (DNR). These results should not be used.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0370 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| ✓ | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-B08-4-5-07/22/2022 and FD-17-07/22//2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, field duplicate, and laboratory duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW6020B | ARSENIC | 2.71 | mg/kg | D | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW6020B | COPPER | 28 | mg/kg | D | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW6020B | LEAD | 4.69 | mg/kg | D | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW6020B | ZINC | 57.7 | mg/kg | D | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW7471B | MERCURY | 0.0432 | mg/kg | | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-1-2-07222022 | 22G0370-11RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW6020B | ARSENIC | 2.58 | mg/kg | D | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW6020B | COPPER | 26.2 | mg/kg | D | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW6020B | LEAD | 4.44 | mg/kg | D | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW6020B | ZINC | 57.4 | mg/kg | D | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW7471B | MERCURY | 0.0371 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-2-3-07222022 | 22G0370-12RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW6020B | ARSENIC | 2.32 | mg/kg | D | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW6020B | COPPER | 22.9 | mg/kg | D | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW6020B | LEAD | 4 | mg/kg | D | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW6020B | ZINC | 50.9 | mg/kg | D | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW7471B | MERCURY | 0.0398 | mg/kg | | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-3-4-07222022 | 22G0370-13RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW6020B | ARSENIC | 2.42 | mg/kg | D | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW6020B | COPPER | 24.8 | mg/kg | D | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW6020B | LEAD | 4.24 | mg/kg | D | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW6020B | ZINC | 54.9 | mg/kg | D | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW7471B | MERCURY | 0.0356 | mg/kg | | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-4-5-07/22/2022 | 22G0370-14RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW6020B | ARSENIC | 2.51 | mg/kg | D | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW6020B | COPPER | 25.4 | mg/kg | D | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW6020B | LEAD | 4.4 | mg/kg | D | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW6020B | ZINC | 56.3 | mg/kg | D | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW7471B | MERCURY | 0.0374 | mg/kg | | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-17-07/22//2022 | 22G0370-15RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW6020B | ARSENIC | 2.64 | mg/kg | D | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW6020B | COPPER | 26.3 | mg/kg | D | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW6020B | LEAD | 4.5 | mg/kg | D | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW6020B | ZINC | 58.3 | mg/kg | D | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW7471B | MERCURY | 0.0401 | mg/kg | | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B08-5-6-07222022 | 22G0370-16RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0370 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/11/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0370 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB04-07/21/2022 is the EB associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0343. This EB was free from all contamination.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|-------------|------------------------|------------------|---------------------|---|--------------------------------|----------------------------|
| All samples | All 5x diluted results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |

Metals – 6020B and 7471B

The validation report did not note that the mercury SRM for batch BKH0378 was recovered slightly above the upper control limit. The %R was 141% and the UCL is 140%. In the judgment of the HGL reviewer, this discrepancy is nominal and no additional qualification is required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0371

April 3, 2013

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0371 | SIB-SC-B09-0-1-07222022 | 22G0371-05 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-B09-1-2-07222022 | 22G0371-06 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-B09-2-3-07222022 | 22G0371-07 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-B09-3-4-07222022 | 22G0371-08 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-B09-4-5-07222022 | 22G0371-09 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-B09-5-6-07222022 | 22G0371-10 | SE | ✓ | ✓ | ✓ |
| 22G0371 | SIB-SC-C07-1-2-07222022 | 22G0371-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0371 | 7 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

For Sample SIB-SC-C07-1-2-07/22/2022, the percent recovery (%R) value for decachlorobiphenyl (DCBP) was greater than the upper control limit on column 1. The %R value for DCBP was within the control limit on column 2, and the %R values for tetrachloro-m-xylene (TCMX) were within the control limit on both columns; no qualifiers were assigned.

Field Duplicates

No field duplicates were submitted.

Reported Results

The laboratory initially analyzed all samples at a 5x dilution due to the sample matrix. There were no positive results in the following samples; therefore, the samples were reanalyzed at a 1x dilution. Results for both analyses were reported. The results from the 5x dilutions were qualified as do-not-report (DNR-EXC) to indicate which of the two results should not be used.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|-------------------------|----------|-----------|---------------------------------|
| SIB-SC-B09-0-1-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B09-1-2-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B09-3-4-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B09-4-5-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-B09-5-6-07222022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |

Reporting Limits

Some samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD relative percent difference (RPD) values.

Results from the diluted analyses of five samples were qualified as do-not-report (DNR). These results should not be used.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0371 | 7 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Laboratory batch QC was performed on another SDG for the matrix spike/matrix spike duplicate samples (MS/MSD). Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory batch QC was performed on another SDG for the laboratory duplicate samples. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and SRM recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW6020B | ARSENIC | 3.35 | mg/kg | D | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW6020B | COPPER | 34.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW6020B | LEAD | 6.79 | mg/kg | D | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW6020B | ZINC | 70.6 | mg/kg | D | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW7471B | MERCURY | 0.0418 | mg/kg | | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-0-1-07222022 | 22G0371-05RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW6020B | ARSENIC | 3.73 | mg/kg | D | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW6020B | COPPER | 28.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW6020B | LEAD | 11.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW6020B | ZINC | 77.1 | mg/kg | D | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW7471B | MERCURY | 0.0831 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 9.1 | ug/kg | | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 10.9 | ug/kg | | | | ✓ |
| SIB-SC-B09-1-2-07222022 | 22G0371-06RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW6020B | ARSENIC | 3.82 | mg/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW6020B | COPPER | 28.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW6020B | LEAD | 22.4 | mg/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW6020B | ZINC | 82.2 | mg/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW7471B | MERCURY | 0.155 | mg/kg | | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1254 (AROCOLOR 1254) | 31 | ug/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1260 (AROCOLOR 1260) | 32.7 | ug/kg | D | | | ✓ |
| SIB-SC-B09-2-3-07222022 | 22G0371-07 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW6020B | ARSENIC | 3.41 | mg/kg | D | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW6020B | COPPER | 26.8 | mg/kg | D | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW6020B | LEAD | 5.9 | mg/kg | D | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW6020B | ZINC | 60.6 | mg/kg | D | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW7471B | MERCURY | 0.0531 | mg/kg | | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 8.4 | ug/kg | | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 5.5 | ug/kg | | | | ✓ |
| SIB-SC-B09-3-4-07222022 | 22G0371-08RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW6020B | ARSENIC | 3.15 | mg/kg | D | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW6020B | COPPER | 30.2 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW6020B | LEAD | 5.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW6020B | ZINC | 63.1 | mg/kg | D | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW7471B | MERCURY | 0.0445 | mg/kg | | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-4-5-07222022 | 22G0371-09RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW6020B | ARSENIC | 2.92 | mg/kg | D | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW6020B | COPPER | 28.6 | mg/kg | D | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW6020B | LEAD | 5.02 | mg/kg | D | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW6020B | ZINC | 61.3 | mg/kg | D | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW7471B | MERCURY | 0.0394 | mg/kg | | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B09-5-6-07222022 | 22G0371-10RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW6020B | ARSENIC | 5.26 | mg/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW6020B | COPPER | 68.8 | mg/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW6020B | LEAD | 48.4 | mg/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW6020B | ZINC | 189 | mg/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW7471B | MERCURY | 0.18 | mg/kg | | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 57.2 | ug/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 58.5 | ug/kg | D | | | ✓ |
| SIB-SC-C07-1-2-07222022 | 22G0371-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0371 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/11/2023 |

General issues: The final version of the Stage 4 laboratory data report ge.22G0371 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB04-07/21/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0343. This EB was free from all contamination.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-B09-0-1-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-B09-1-2-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-B09-3-4-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-B09-4-5-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-B09-5-6-07/22/2022 (5x dilution) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0377

April 3, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0377 | SIB-SC-C07-2-3-07222022 | 22G0377-01 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C07-3-4-07222022 | 22G0377-02 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C07-4-5-07222022 | 22G0377-03 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C07-5-6-07222022 | 22G0377-04 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C08-1-2-07222022 | 22G0377-10 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C08-2-3-07222022 | 22G0377-11 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C08-3-4-07222022 | 22G0377-12 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C08-4-5-07222022 | 22G0377-13 | SE | ✓ | ✓ | ✓ |
| 22G0377 | SIB-SC-C08-5-6-07222022 | 22G0377-14 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0377 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Samples SIB-SC-C08-2-3-07/22/2022, SIB-SC-C08-3-4-07/22/2022, and SIB-SC-C08-4-5-07/22/2022, the %R value for DCBP was greater than the upper control limit on column 1. The %R value for DCBP was within the control limit on column 2, and the value of TCMX was within the control limit on both columns; no qualifiers were assigned.

Field Duplicates

No field duplicates were submitted.

Reported Results

The laboratory initially analyzed all samples at a 5x dilution due to the sample matrix. There were no positive results in five of the samples; therefore, these were reanalyzed at a 1x dilution. Results for both analyses were reported. The results from the 5x dilutions were qualified as do-not-report (DNR-EXC) to indicate which of the two results should not be used.

| SAMPLE | DILUTION | QUALIFIER | COMMENT |
|---------------------------|----------|-----------|---------------------------------|
| SIB-SC-C07-3-4-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C07-4-5-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C07-5-6-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C08-4-5-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |
| SIB-SC-C08-5-6-07/22/2022 | 1x | None | |
| | 5x | DNR-EXC | Over-diluted, re-analyzed at 1x |

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and matrix spike/matrix spike suplicate (MS/MSD) recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD relative percent difference (RPD) values.

Results from the diluted analyses of five samples were qualified as do-not-report (DNR). These results should not be used.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0377 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Laboratory batch QC was performed on another SDG for the matrix spike/matrix spike duplicate samples (MS/MSD). Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory batch QC was performed on another SDG for the laboratory duplicate samples. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and SRM recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW6020B | ARSENIC | 3.93 | mg/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW6020B | CADMIUM | 0.2 | mg/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW6020B | COPPER | 45.5 | mg/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW6020B | LEAD | 25.8 | mg/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW6020B | ZINC | 102 | mg/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW7471B | MERCURY | 0.122 | mg/kg | | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 43.4 | ug/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 45.6 | ug/kg | D | | | ✓ |
| SIB-SC-C07-2-3-07222022 | 22G0377-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW6020B | ARSENIC | 3.4 | mg/kg | D | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW6020B | COPPER | 27.7 | mg/kg | D | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW6020B | LEAD | 5.49 | mg/kg | D | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW6020B | ZINC | 56.2 | mg/kg | D | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW7471B | MERCURY | 0.0831 | mg/kg | | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 12 | ug/kg | D J | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 3.2 | ug/kg | D J | DNR | EXC | |
| SIB-SC-C07-3-4-07222022 | 22G0377-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.2 | ug/kg | | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-3-4-07222022 | 22G0377-02RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW6020B | ARSENIC | 3.14 | mg/kg | D | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW6020B | COPPER | 32.7 | mg/kg | D | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW6020B | LEAD | 5.91 | mg/kg | D | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW6020B | ZINC | 61 | mg/kg | D | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW7471B | MERCURY | 0.046 | mg/kg | | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-4-5-07222022 | 22G0377-03RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW6020B | ARSENIC | 2.62 | mg/kg | D | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW6020B | COPPER | 28.2 | mg/kg | D | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW6020B | LEAD | 4.79 | mg/kg | D | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW6020B | ZINC | 53.8 | mg/kg | D | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW7471B | MERCURY | 0.0391 | mg/kg | | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C07-5-6-07222022 | 22G0377-04RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW6020B | ARSENIC | 6.89 | mg/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW6020B | COPPER | 108 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW6020B | LEAD | 38.2 | mg/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW7471B | MERCURY | 0.163 | mg/kg | | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 41.9 | ug/kg | P1 D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 142 | ug/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 91.3 | ug/kg | D | | | ✓ |
| SIB-SC-C08-1-2-07222022 | 22G0377-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW6020B | ARSENIC | 8.87 | mg/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW6020B | CADMIUM | 0.67 | mg/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW6020B | COPPER | 146 | mg/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW6020B | LEAD | 73.8 | mg/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW6020B | ZINC | 339 | mg/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW7471B | MERCURY | 0.284 | mg/kg | | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 111 | ug/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 293 | ug/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 172 | ug/kg | D | | | ✓ |
| SIB-SC-C08-2-3-07222022 | 22G0377-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW6020B | ARSENIC | 4.08 | mg/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW6020B | COPPER | 53.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW6020B | LEAD | 23.7 | mg/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW7471B | MERCURY | 0.146 | mg/kg | | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 108 | ug/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 259 | ug/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 97.6 | ug/kg | D | | | ✓ |
| SIB-SC-C08-3-4-07222022 | 22G0377-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW6020B | ARSENIC | 2.75 | mg/kg | D | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW6020B | COPPER | 27 | mg/kg | D | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW6020B | LEAD | 5.33 | mg/kg | D | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW6020B | ZINC | 55.8 | mg/kg | D | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW7471B | MERCURY | 0.0572 | mg/kg | | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-4-5-07222022 | 22G0377-13RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW6020B | ARSENIC | 2.54 | mg/kg | D | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW6020B | COPPER | 23.8 | mg/kg | D | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW6020B | LEAD | 4.57 | mg/kg | D | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW6020B | ZINC | 51 | mg/kg | D | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW7471B | MERCURY | 0.0929 | mg/kg | | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C08-5-6-07222022 | 22G0377-14RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0377 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/12/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0377 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB04-07/21/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0343. This EB was free from all contamination.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator. The “detect_flag” field should be changed from N to Y for the PCB-1254 and PCB-1260 results reported for the 5x dilution of sample SIB-SC-C07-3-4-07/22/2022.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-----------------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-C07-3-4-07/22/2022 (5x dilution) | PCB-1254 and PCB-1260 | varies | DNR | Change “reportable_result” from “Yes” to “No” Change “detect_flag” from “N” to “Y” | | |
| | All other results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-C07-4-5-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-C07-5-6-07/22/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-C08-4-5-07/22/2022 (5x dilution) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |
| SIB-SC-C08-5-6-07/22/2022 (5x dilution) | All results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0379

April 3, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|---------------|--------|-----|--------|---------|
| 22G0379 | SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SE | ✓ | ✓ | ✓ |
| 22G0379 | SIB-SC-C09-1-2-07/24/2022 | 22G0379-18RE1 | SE | ✓ | ✓ | ✓ |
| 22G0379 | FD-18-07/24/2022 | 22G0379-19RE1 | SE | ✓ | ✓ | ✓ |
| 22G0379 | SIB-SC-C09-2-3-07242022 | 22G0379-20RE1 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0379 | 4 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The client identifications (ID) for Samples SIB-SC-F21-5-6-07242022, SIB-SC-C09-1-2-07/24/2022, and SIB-SC-C09-2-3-07242022, did not match between the chains-of-custody (COC) and the container labels. The information on the COC was used for login purposes.

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Sample SIB-SC-C09-2-3-07/24/2022, the %R value for DCBP was greater than the upper control limit on column 1. DCBP was within the control limit on column 2, and TCMX was within the control limit on both columns. No qualifiers were assigned.

For SIB-SC-C09-2-3-07/24/2022 MS/MSD, the %R values for DCBP were greater than the upper control limit on column 1. DCBP was within the control limit on column 2, and TCMX was within the control limit on both columns. No qualifiers were assigned.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-C09-1-2-07/24/2022 & FD-18-07/24/2022, was submitted. Field precision was acceptable.

Reported Results

All samples were analyzed and reported at 5X dilutions due to sample matrix. For Sample SIB-SC-F21-5-6-07/24/2022, no target analytes were detected. The sample was re-analyzed at a 1x dilution. Results for both analyses were reported. The results from the 5x dilution were qualified as do-not-report (DNR-EXC) to indicate which of the two results should not be used.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Results from the 5X dilution of Sample SIB-SC-F21-5-6-07/24/2022 were qualified as do-not-report (DNR). These results should not be used.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0379 | 4 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The client identifications (ID) for Samples SIB-SC-F21-5-6-07242022, SIB-SC-C09-1-2-07/24/2022, and SIB-SC-C09-2-3-07242022, did not match between the chains-of-custody (COC) and the container labels. The information on the COC was used for login purposes.

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). For %R values less than 30%, indicating an extreme low bias, associated results are estimated (J/UJ-MSLX). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0376, MS/MSD samples were analyzed using Sample SIB-SC-C09-2-3-07242022. Mercury was not recovered in the MS sample and was in control in the associated MSD sample. The RPD value for mercury was greater than the control limit; associated results in this batch were estimated (J-MSLX,MSP).

For Batch BKI0382, MS/MSD samples were analyzed using Sample SIB-SC-C09-2-3-07242022. Lead and copper recoveries in the MSD sample were greater than the upper control limit, but were in control in the associated MS sample; associated detected copper and lead results were estimated (J-MSH).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0376, Sample SIB-SC-C09-2-3-07242022 was used for the lab duplicate. The difference value for mercury was greater than the control limit; results in this batch were estimated (J-LDPA).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-D17-2-3-07/19/2022 & FD-14-07/19/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as a laboratory duplicate precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|--------------|---------------|------------------------------|
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW6020B | ARSENIC | 2.7 | mg/kg | D | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW6020B | COPPER | 18.7 | mg/kg | D | J | MSH | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW6020B | LEAD | 2.94 | mg/kg | D | J | MSH | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW6020B | ZINC | 48.7 | mg/kg | D | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW7471B | MERCURY | 0.0182 | mg/kg | J | J | MSLX,MSP,LDPA | |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-F21-5-6-07242022 | 22G0379-10RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW6020B | ARSENIC | 10.9 | mg/kg | D | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW6020B | COPPER | 171 | mg/kg | D | J | MSH | |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW6020B | LEAD | 66.7 | mg/kg | D | J | MSH | |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW6020B | ZINC | 387 | mg/kg | D | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1254 (AROCOLOR 1254) | 227 | ug/kg | D | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1260 (AROCOLOR 1260) | 147 | ug/kg | D | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-1-2-07/24/2022 | 22G0379-18RE1 | SW7471B | MERCURY | 0.253 | mg/kg | | J | MSLX,MSP,LDPA | |
| FD-18-07/24/2022 | 22G0379-19 | SW6020B | ARSENIC | 9.92 | mg/kg | D | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW6020B | COPPER | 165 | mg/kg | D | J | MSH | |
| FD-18-07/24/2022 | 22G0379-19 | SW6020B | LEAD | 61.8 | mg/kg | D | J | MSH | |
| FD-18-07/24/2022 | 22G0379-19 | SW6020B | ZINC | 360 | mg/kg | D | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1254 (AROCOLOR 1254) | 186 | ug/kg | D | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1260 (AROCOLOR 1260) | 119 | ug/kg | D | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-18-07/24/2022 | 22G0379-19RE1 | SW7471B | MERCURY | 0.262 | mg/kg | | J | MSLX,MSP,LDPA | |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW6020B | ARSENIC | 6.82 | mg/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW6020B | COPPER | 124 | mg/kg | D | J | MSH | |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW6020B | LEAD | 66.8 | mg/kg | D | J | MSH | |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW6020B | ZINC | 283 | mg/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 278 | ug/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 146 | ug/kg | D | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-2-3-07242022 | 22G0379-20RE1 | SW7471B | MERCURY | 0.159 | mg/kg | | J | MSLX,MSP,LDPA | |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0379 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/12/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0379 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinse blanks associated with sediment cores were submitted separately from the associated field samples. In the judgment of the HGL reviewer, rinse blank EB05-07/26/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. This EB was free from contamination except for chromium; chromium is not a target analyte for sediment and no qualification is required.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed SIB-SC-F21-5-6-07242022 at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-F21-5-6-07242022 (5x dilution) | All results | -- | DNR | Change “reportable_result” from “Yes” to “No” | | |

Metals – 6020B and 7471B

The field duplicates described in the DV report do not match the field duplicate and sample IDs included in this SDG. The PCBs section includes the correct field duplicate and parent sample. The HGL reviewer confirmed that field duplicate precision was met for the field duplicate pair in this SDG.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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Prepared by:

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EcoChem Project: C28601-1

SDG: 22G0383

April 4, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|---------------|--------|-----|--------|---------|
| 22G0383 | SIB-SC-C09-3-4-07242022 | 22G0383-01RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C09-4-5-07242022 | 22G0383-02RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C10-1-2-07242022 | 22G0383-14RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C10-2-3-07242022 | 22G0383-15RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SE | ✓ | ✓ | ✓ |
| 22G0383 | SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0383 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Samples SIB-SC-C09-3-4-07/24/2022 and SIB-SC-C10-1-2-07/24/2022, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

Field Duplicates

No field duplicates were submitted.

Reported Results

Several samples were analyzed and reported at 5X dilutions due to sample matrix. Samples SIB-SC-C09-5-6-07/24/2022 and SIB-SC-C10-4-5-07/24/2022 were re-analyzed undiluted (1x). Both sets of results were reported. Results from the 1x should be used; results from the 5x dilution were qualified as do-not-report (DNR-EXC).

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, SRM, and LCS/LCSD recoveries. Precision was acceptable based on the LCS/LCSD RPD values.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0383 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Laboratory batch QC was performed on another SDG for the matrix spike/matrix spike duplicate samples (MS/MSD). Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory batch QC was performed on another SDG for the laboratory duplicate samples. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and SRM recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW6020B | ARSENIC | 6.3 | mg/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW6020B | COPPER | 115 | mg/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW6020B | LEAD | 122 | mg/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW6020B | ZINC | 305 | mg/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 172 | ug/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 376 | ug/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 265 | ug/kg | D | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-3-4-07242022 | 22G0383-01RE1 | SW7471B | MERCURY | 0.28 | mg/kg | | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW6020B | ARSENIC | 3.54 | mg/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW6020B | COPPER | 32.1 | mg/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW6020B | LEAD | 16.8 | mg/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW6020B | ZINC | 89.5 | mg/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 19.3 | ug/kg | D J | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 60.1 | ug/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 46.2 | ug/kg | D | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C09-4-5-07242022 | 22G0383-02RE1 | SW7471B | MERCURY | 0.156 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW6020B | ARSENIC | 3.27 | mg/kg | D | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW6020B | COPPER | 33.4 | mg/kg | D | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW6020B | LEAD | 7.09 | mg/kg | D | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW6020B | ZINC | 71.6 | mg/kg | D | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 27.7 | ug/kg | D | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 12.7 | ug/kg | D J | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW7471B | MERCURY | 0.089 | mg/kg | | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 5.7 | ug/kg | | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 15.9 | ug/kg | | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 10.1 | ug/kg | | | | ✓ |
| SIB-SC-C09-5-6-07242022 | 22G0383-03RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW6020B | ARSENIC | 5.7 | mg/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW6020B | COPPER | 91 | mg/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW6020B | LEAD | 65.9 | mg/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW6020B | ZINC | 246 | mg/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 169 | ug/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 359 | ug/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-1-2-07242022 | 22G0383-14RE1 | SW7471B | MERCURY | 0.122 | mg/kg | | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW6020B | ARSENIC | 3.2 | mg/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW6020B | COPPER | 29.8 | mg/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW6020B | LEAD | 17.2 | mg/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW6020B | ZINC | 87.7 | mg/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.5 | ug/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 62.5 | ug/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 49.8 | ug/kg | D | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C10-2-3-07242022 | 22G0383-15RE1 | SW7471B | MERCURY | 0.314 | mg/kg | | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16 | SW6020B | ARSENIC | 3.06 | mg/kg | D | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16 | SW6020B | COPPER | 28.6 | mg/kg | D | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16 | SW6020B | LEAD | 8.58 | mg/kg | D | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW7471B | MERCURY | 0.094 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3.5 | ug/kg | J | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 5 | ug/kg | | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 2.6 | ug/kg | J | | | ✓ |
| SIB-SC-C10-3-4-07242022 | 22G0383-16RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW6020B | ARSENIC | 3 | mg/kg | D | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW6020B | COPPER | 31.5 | mg/kg | D | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW6020B | LEAD | 5.52 | mg/kg | D | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW6020B | ZINC | 61.9 | mg/kg | D | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW7471B | MERCURY | 0.0583 | mg/kg | | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-4-5-07242022 | 22G0383-17RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18 | SW6020B | ARSENIC | 2.98 | mg/kg | D | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18 | SW6020B | COPPER | 30.4 | mg/kg | D | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18 | SW6020B | LEAD | 5.69 | mg/kg | D | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18 | SW6020B | ZINC | 60.4 | mg/kg | D | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW7471B | MERCURY | 0.0616 | mg/kg | | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3.2 | ug/kg | J | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.9 | ug/kg | J | | | ✓ |
| SIB-SC-C10-5-6-07242022 | 22G0383-18RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0383 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/13/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0383 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB05-07/26/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. This EB was free from contamination except for chromium; chromium is not a target analyte for sediment and no qualification is required.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-----------------------|------------------|---------------------|---|--------------------------------|----------------------------|
| SIB-SC-C09-5-6-07/24/2022 (5x dilution) | PCB-1254 and PCB-1260 | varies | DNR | Change “reportable_result” from “Yes” to “No” Change “detect_flag” from “N” to “Y” | | |
| | All other results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| SIB-SC-C10-4-5-07/24/2022 (5x dilution) | All results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0385

April 4, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|---------------|--------|-----|--------|---------|
| 22G0385 | SIB-SC-C05-1-2-07242022 | 22G0385-09RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C05-2-3-07242022 | 22G0385-10RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C05-3-4-07242022 | 22G0385-11 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C05-4-5-07242022 | 22G0385-12RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C11-1-2-07242022 | 22G0385-14RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C11-2-3-07242022 | 22G0385-15RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C11-3-4-07242022 | 22G0385-16RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C11-4-5-07242022 | 22G0385-17RE1 | SE | ✓ | ✓ | ✓ |
| 22G0385 | SIB-SC-C11-5-6-07242022 | 22G0385-18RE1 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0385 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

Sample SIB-SC-C05-5-6-07242022 was listed on the chain-of-custody (COC) for analysis but was not received in the shipment.

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-C11-1-2-07/24/2022
- SIB-SC-C11-2-3-07/24/2022
- SIB-SC-C11-3-4-07/24/2022
- SIB-SC-C11-4-5-07/24/2022
- SIB-SC-C11-5-6-07/24/2022

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, SRM, and matrix spike/matrix spike suplicate (MS/MSD) recoveries. Precision was acceptable based on the MS/MSD and LCS/LCSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0385 | 9 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

Sample SIB-SC-C05-5-6-07242022 was listed on the chain-of-custody (COC) for analysis but was not received in the shipment.

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Laboratory batch QC was performed on another SDG for the matrix spike/matrix spike duplicate samples (MS/MSD). Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory batch QC was performed on another SDG for the laboratory duplicate samples. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and SRM recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW6020B | LEAD | 63.7 | mg/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW6020B | ARSENIC | 6.43 | mg/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW6020B | COPPER | 123 | mg/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW6020B | ZINC | 262 | mg/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09RE1 | SW7471B | MERCURY | 0.234 | mg/kg | | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 241 | ug/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 74.9 | ug/kg | D | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-1-2-07242022 | 22G0385-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW6020B | LEAD | 27.2 | mg/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW6020B | ARSENIC | 4.14 | mg/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW6020B | CADMIUM | 0.25 | mg/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW6020B | COPPER | 48.4 | mg/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW6020B | ZINC | 142 | mg/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10RE1 | SW7471B | MERCURY | 0.231 | mg/kg | | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 73.2 | ug/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.3 | ug/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 33.4 | ug/kg | D | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-2-3-07242022 | 22G0385-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW6020B | LEAD | 24.5 | mg/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW6020B | ARSENIC | 4.27 | mg/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW6020B | CADMIUM | 0.25 | mg/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW6020B | COPPER | 42.2 | mg/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW6020B | ZINC | 132 | mg/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW7471B | MERCURY | 0.0974 | mg/kg | | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 83.6 | ug/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 42.7 | ug/kg | D | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-3-4-07242022 | 22G0385-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW6020B | LEAD | 5.74 | mg/kg | D | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW6020B | ARSENIC | 2.82 | mg/kg | D | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW6020B | COPPER | 19 | mg/kg | D | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW6020B | ZINC | 55.6 | mg/kg | D | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12RE1 | SW7471B | MERCURY | 0.142 | mg/kg | | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 12.2 | ug/kg | | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 7.1 | ug/kg | | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C05-4-5-07242022 | 22G0385-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW6020B | LEAD | 74.8 | mg/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW6020B | ARSENIC | 6.41 | mg/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW6020B | COPPER | 71.9 | mg/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW6020B | ZINC | 226 | mg/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14RE1 | SW7471B | MERCURY | 0.1 | mg/kg | | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 140 | ug/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 245 | ug/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 84.9 | ug/kg | D | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-1-2-07242022 | 22G0385-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW6020B | LEAD | 58.8 | mg/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW6020B | ARSENIC | 5.91 | mg/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW6020B | COPPER | 68.1 | mg/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15RE1 | SW7471B | MERCURY | 0.0322 | mg/kg | J | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 131 | ug/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 149 | ug/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.4 | ug/kg | D | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-2-3-07242022 | 22G0385-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW6020B | LEAD | 72.1 | mg/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW6020B | ARSENIC | 6.14 | mg/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW6020B | COPPER | 72.8 | mg/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW6020B | ZINC | 269 | mg/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16RE1 | SW7471B | MERCURY | 0.349 | mg/kg | | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 189 | ug/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 64 | ug/kg | D | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-3-4-07242022 | 22G0385-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW6020B | LEAD | 54.4 | mg/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW6020B | ARSENIC | 5.48 | mg/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW6020B | COPPER | 62.9 | mg/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW6020B | ZINC | 207 | mg/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17RE1 | SW7471B | MERCURY | 0.347 | mg/kg | | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 159 | ug/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.9 | ug/kg | D | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-4-5-07242022 | 22G0385-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW6020B | LEAD | 36.2 | mg/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW6020B | ARSENIC | 4.33 | mg/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW6020B | COPPER | 50.1 | mg/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW6020B | ZINC | 141 | mg/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18RE1 | SW7471B | MERCURY | 0.0269 | mg/kg | J | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 89.6 | ug/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.8 | ug/kg | D | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C11-5-6-07242022 | 22G0385-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0385 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/13/2023 |

General issues: The final version of the Stage 4 laboratory data report 22G0385 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB05-07/26/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. This EB was free from contamination except for chromium; chromium is not a target analyte for sediment and no qualification is required.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0438

April 4, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0438 | SIB-SC-C12-1-2-07252022 | 22G0438-02 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-C12-2-3-07252022 | 22G0438-03 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-C12-3-4-07252022 | 22G0438-04 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-C12-4-5-07252022 | 22G0438-05 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-C12-5-6-07252022 | 22G0438-06 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-1-2-07252022 | 22G0438-15 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-2-3-07252022 | 22G0438-16 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-3-4-07252022 | 22G0438-17 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-4-5-07252022 | 22G0438-18 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-5-6-07252022 | 22G0438-19 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SE | ✓ | ✓ | ✓ |
| 22G0438 | FD-19-07/25/2022 | 22G0438-21 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-7-8-07252022 | 22G0438-22 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-8-9-07252022 | 22G0438-23 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-9-10-07252022 | 22G0438-24 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-10-11-07252022 | 22G0438-25 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-11-12-07252022 | 22G0438-26 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-12-13-07252022 | 22G0438-27 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-13-14-07252022 | 22G0438-28 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-E33-14-15-07252022 | 22G0438-29 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-B25-1-2-07252022 | 22G0438-35 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-B25-2-3-07252022 | 22G0438-36 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-B25-3-4-07252022 | 22G0438-37 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-B25-4-5-07252022 | 22G0438-38 | SE | ✓ | ✓ | ✓ |
| 22G0438 | SIB-SC-B25-5-6-07252022 | 22G0438-39 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0438 | 25 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on one column but within control limits on the other column. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-C12-1-2-07/25/2022
- SIB-SC-E33-2-3-07/25/2022
- SIB-SC-E33-3-4-07/25/2022
- SIB-SC-E33-4-5-07/25/2022
- SIB-SC-E33-5-6-07/25/2022
- SIB-SC-E33-6-7-07/25/2022
- SIB-SC-E33-14-15-07/25/2022
- SIB-SC-B25-1-2-07/25/2022
- SIB-SC-B25-2-3-07/25/2022
- SIB-SC-B25-3-4-07/25/2022

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-E33-6-7-07/25/2022 & FD-19-07/25/2022, were submitted. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, SRM, and matrix spike/matrix spike suppicate (MS/MSD) recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0438 | 25 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| 1 | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-MBH). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J-MBL) and non-detects are estimated (UJ-MBL) to indicate a potential low bias.

For extraction batch, BKJ0010, mercury was detected in the method blank. All sample results were greater than the action level. No data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For batch BKJ0010, MS/MSD samples were analyzed using Sample SIB-SC-E33-8-9-07252022. The MS/MSD recoveries for mercury were less than the lower control limit; associated sample results were estimated (J-MSL). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-E33-6-7-07/25/2022 & FD-19-07/25/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

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|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW6020B | ARSENIC | 6.45 | mg/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW6020B | CADMIUM | 0.66 | mg/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW6020B | COPPER | 85.4 | mg/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW6020B | LEAD | 92.3 | mg/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW6020B | ZINC | 304 | mg/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW7471B | MERCURY | 0.623 | mg/kg | | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 75.2 | ug/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 252 | ug/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 168 | ug/kg | D | | | ✓ |
| SIB-SC-C12-1-2-07252022 | 22G0438-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW6020B | ARSENIC | 2.64 | mg/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW6020B | COPPER | 24.7 | mg/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW6020B | LEAD | 15.3 | mg/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW6020B | ZINC | 77.1 | mg/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW7471B | MERCURY | 0.105 | mg/kg | | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 34.7 | ug/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 24.1 | ug/kg | D | | | ✓ |
| SIB-SC-C12-2-3-07252022 | 22G0438-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW6020B | ARSENIC | 3.99 | mg/kg | D | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW6020B | COPPER | 27.9 | mg/kg | D | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW6020B | LEAD | 5.36 | mg/kg | D | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW6020B | ZINC | 56 | mg/kg | D | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW7471B | MERCURY | 0.0892 | mg/kg | | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-3-4-07252022 | 22G0438-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW6020B | ARSENIC | 4.57 | mg/kg | D | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW6020B | COPPER | 40.5 | mg/kg | D | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW6020B | LEAD | 7.2 | mg/kg | D | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW6020B | ZINC | 72.6 | mg/kg | D | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW7471B | MERCURY | 0.0665 | mg/kg | | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-4-5-07252022 | 22G0438-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW6020B | ARSENIC | 4.54 | mg/kg | D | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW6020B | COPPER | 40.6 | mg/kg | D | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW6020B | LEAD | 6.9 | mg/kg | D | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW6020B | ZINC | 67.1 | mg/kg | D | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW7471B | MERCURY | 0.0775 | mg/kg | | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C12-5-6-07252022 | 22G0438-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW6020B | ARSENIC | 6.8 | mg/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW6020B | COPPER | 63 | mg/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW6020B | LEAD | 49.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW6020B | ZINC | 215 | mg/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW7471B | MERCURY | 0.21 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 33 | ug/kg | P1 D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 49.3 | ug/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 48.4 | ug/kg | D | | | ✓ |
| SIB-SC-E33-1-2-07252022 | 22G0438-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW6020B | ARSENIC | 7.59 | mg/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW6020B | COPPER | 67 | mg/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW6020B | LEAD | 49.7 | mg/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW7471B | MERCURY | 0.322 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 38 | ug/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 77.1 | ug/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 79.6 | ug/kg | D | | | ✓ |
| SIB-SC-E33-2-3-07252022 | 22G0438-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW6020B | ARSENIC | 6.78 | mg/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW6020B | COPPER | 78.8 | mg/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW6020B | LEAD | 55.4 | mg/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW6020B | ZINC | 246 | mg/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW7471B | MERCURY | 0.336 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 72.6 | ug/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 139 | ug/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 172 | ug/kg | D | | | ✓ |
| SIB-SC-E33-3-4-07252022 | 22G0438-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW6020B | ARSENIC | 5.96 | mg/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW6020B | COPPER | 53.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW6020B | LEAD | 38.3 | mg/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW6020B | ZINC | 213 | mg/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW7471B | MERCURY | 0.235 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 46.6 | ug/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 76.6 | ug/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 85.6 | ug/kg | D | | | ✓ |
| SIB-SC-E33-4-5-07252022 | 22G0438-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW6020B | ARSENIC | 6.25 | mg/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW6020B | COPPER | 49 | mg/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW6020B | LEAD | 36.9 | mg/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW6020B | ZINC | 228 | mg/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW7471B | MERCURY | 0.282 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 57.9 | ug/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 74.1 | ug/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 87.8 | ug/kg | D | | | ✓ |
| SIB-SC-E33-5-6-07252022 | 22G0438-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW6020B | ARSENIC | 6.12 | mg/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW6020B | COPPER | 51.8 | mg/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW6020B | LEAD | 39.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW6020B | ZINC | 226 | mg/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW7471B | MERCURY | 0.256 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.9 | ug/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 83.9 | ug/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 94.8 | ug/kg | D | | | ✓ |
| SIB-SC-E33-6-7-07/25/2022 | 22G0438-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW6020B | ARSENIC | 5.87 | mg/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW6020B | COPPER | 51 | mg/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW6020B | LEAD | 35.4 | mg/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW6020B | ZINC | 223 | mg/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW7471B | MERCURY | 0.3 | mg/kg | B | J | MSL,MSP | |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.5 | ug/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 85.2 | ug/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 121 | ug/kg | D | | | ✓ |
| FD-19-07/25/2022 | 22G0438-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW6020B | ARSENIC | 6.14 | mg/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW6020B | COPPER | 57.3 | mg/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW6020B | LEAD | 44 | mg/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW6020B | ZINC | 236 | mg/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW7471B | MERCURY | 0.253 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.3 | ug/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-E33-7-8-07252022 | 22G0438-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW6020B | ARSENIC | 6.06 | mg/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW6020B | COPPER | 58.6 | mg/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW6020B | LEAD | 40.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW6020B | ZINC | 250 | mg/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW7471B | MERCURY | 0.19 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 74.8 | ug/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 169 | ug/kg | D | | | ✓ |
| SIB-SC-E33-8-9-07252022 | 22G0438-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW6020B | ARSENIC | 5.87 | mg/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW6020B | COPPER | 53.1 | mg/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW6020B | LEAD | 37.9 | mg/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW6020B | ZINC | 240 | mg/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW7471B | MERCURY | 0.203 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.9 | ug/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 83.8 | ug/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-E33-9-10-07252022 | 22G0438-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW6020B | ARSENIC | 5.79 | mg/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW6020B | COPPER | 53.7 | mg/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW6020B | LEAD | 37.1 | mg/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW6020B | ZINC | 240 | mg/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW7471B | MERCURY | 0.156 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 62.3 | ug/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 97.3 | ug/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 161 | ug/kg | D | | | ✓ |
| SIB-SC-E33-10-11-07252022 | 22G0438-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW6020B | ARSENIC | 5.97 | mg/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW6020B | COPPER | 54.5 | mg/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW6020B | LEAD | 34.8 | mg/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW6020B | ZINC | 235 | mg/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW7471B | MERCURY | 0.218 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1248 (AROCLOR 1248) | 46.3 | ug/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 72.2 | ug/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.7 | ug/kg | D | | | ✓ |
| SIB-SC-E33-11-12-07252022 | 22G0438-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW6020B | ARSENIC | 5.74 | mg/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW6020B | COPPER | 60.1 | mg/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW6020B | LEAD | 55.6 | mg/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW6020B | ZINC | 253 | mg/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW7471B | MERCURY | 0.215 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.1 | ug/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 96.4 | ug/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-E33-12-13-07252022 | 22G0438-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW6020B | ARSENIC | 5.72 | mg/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW6020B | COPPER | 66.3 | mg/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW6020B | LEAD | 64.2 | mg/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW6020B | ZINC | 232 | mg/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW7471B | MERCURY | 0.419 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 59.2 | ug/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 137 | ug/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-E33-13-14-07252022 | 22G0438-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW6020B | ARSENIC | 5.31 | mg/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW6020B | COPPER | 51.8 | mg/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW6020B | LEAD | 32.9 | mg/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW6020B | ZINC | 177 | mg/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW7471B | MERCURY | 0.368 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.4 | ug/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1254 (AROCLOR 1254) | 43 | ug/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 46.1 | ug/kg | D | | | ✓ |
| SIB-SC-E33-14-15-07252022 | 22G0438-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW6020B | ARSENIC | 3.31 | mg/kg | D | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW6020B | COPPER | 27 | mg/kg | D | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW6020B | LEAD | 5.22 | mg/kg | D | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW6020B | ZINC | 58.9 | mg/kg | D | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW7471B | MERCURY | 0.0569 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-1-2-07252022 | 22G0438-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW6020B | ARSENIC | 3.04 | mg/kg | D | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW6020B | CADMIUM | 0.15 | mg/kg | D J | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW6020B | COPPER | 34 | mg/kg | D | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW6020B | LEAD | 6.64 | mg/kg | D | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW6020B | ZINC | 70.9 | mg/kg | D | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW7471B | MERCURY | 0.063 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-2-3-07252022 | 22G0438-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW6020B | ARSENIC | 3.25 | mg/kg | D | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW6020B | COPPER | 33.2 | mg/kg | D | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW6020B | LEAD | 6.27 | mg/kg | D | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW7471B | MERCURY | 0.0549 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-3-4-07252022 | 22G0438-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW6020B | ARSENIC | 3.13 | mg/kg | D | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW6020B | COPPER | 34.6 | mg/kg | D | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW6020B | LEAD | 6.55 | mg/kg | D | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW6020B | ZINC | 69.5 | mg/kg | D | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW7471B | MERCURY | 0.0572 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-4-5-07252022 | 22G0438-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW6020B | ARSENIC | 3.26 | mg/kg | D | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW6020B | COPPER | 34.9 | mg/kg | D | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW6020B | LEAD | 6.43 | mg/kg | D | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW6020B | ZINC | 70.9 | mg/kg | D | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW7471B | MERCURY | 0.0549 | mg/kg | B | J | MSL,MSP | |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B25-5-6-07252022 | 22G0438-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0438 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/13/2023 |

General issues: The final version of laboratory data report 22G0438 CLPLIKE (Rev 1) reports non-detected results as RL U on the hardcopy reports. The EDD correctly includes the MDL as the method reporting limit associated with all results and uses the MDL as the value associated with non-detected results. The Stage 2A laboratory report presents non-detections as “ND” with the associated MDL and RL.

The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB05-07/26/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. This EB was free from contamination except for chromium; chromium is not a target analyte for sediment and no qualification is required.

PCBs as Aroclors – 8082A

No additional issues noted.

Metals – 6020B and 7471B

The SRM analyzed in association with ICP-MS batch BK10162 had a slightly low %R for cadmium. All cadmium results were in control for site-specific QC samples (MS/MSD, laboratory duplicate, serial dilution) and in the judgment of the HGL reviewer no additional qualification is required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0441

April 4, 2023

Approved for Release:

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22G0441 | SIB-SC-B32-1-2-07252022 | 22G0441-05 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-B32-2-3-07252022 | 22G0441-06 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-B32-3-4-07252022 | 22G0441-07 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-B32-4-5-07252022 | 22G0441-08 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-B32-5-6-07252022 | 22G0441-09 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SE | ✓ | ✓ | ✓ |
| 22G0441 | FD-20-07/26/2022 | 22G0441-15 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-H08-2-3-07262022 | 22G0441-16 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-H08-3-4-07262022 | 22G0441-17 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-H08-4-5-07262022 | 22G0441-18 | SE | ✓ | ✓ | ✓ |
| 22G0441 | SIB-SC-H08-5-6-07262022 | 22G0441-19 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 20G0441 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the method blank, %R value of DCBP was greater than the upper control limit on column 2; no qualifiers were assigned.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-H08-1-2-07/26/2022 (5x)
- FD-20-07/26/2022 (5x)
- SIB-SC-H08-5-6-07/26/2022

The following samples were analyzed at dilutions (50x, 100x); surrogates were diluted out. No qualifiers were assigned.

- SIB-SC-H08-2-3-07/26/2022
- SIB-SC-H08-3-4-07/26/2022
- SIB-SC-H08-4-5-07/26/2022

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-H08-1-2-07/26/2022 and FD-20-07/26/2022, were submitted. Field precision was acceptable.

Reported Results

Samples SIB-SC-H08-1-2-07/26/2022 and FD-20-07/26/2022 were initially analyzed at a 5x dilution. The concentrations of AR1254 exceeded the calibration range of the instrument and were E-flagged by the laboratory. The samples were re-analyzed at a 25x dilution. The results for AR1254 should be reported from the 25x dilution; the results from the 5x dilution were qualified as do-not-report (DNR-EXC). Results for all other Aroclors should be reported from the 5x dilution and were qualified as do-not-report (DNR-EXC) in the 25x dilution.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD and field duplicate RPD values.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0441 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | 1 | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH). If the percent recovery values indicate a potential very low bias (%R < 30%), associated results are estimated (J/UJ-MSLX).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0476, MS/MSD samples were analyzed using Sample SIB-SC-H08-2-3-07262022. Mercury was not recovered in the MS sample and was less than the lower control limit in the associated MSD sample; associated sample results were estimated (J-MSLX,MSL). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0476, Sample SIB-SC-H08-2-3-07262022 was used for the lab duplicate. The RPD value for mercury was greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-H08-1-2-07/26/2022 & FD-20-07/26/2022 were submitted as field duplicates. All acceptance criteria were met.

Reporting Limits

One or more reporting limits exceeded the QAPP limits due to a required dilution.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as a laboratory duplicate precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW6020B | ARSENIC | 8.04 | mg/kg | D | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW6020B | COPPER | 922 | mg/kg | D | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW6020B | LEAD | 248 | mg/kg | D | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW6020B | ZINC | 540 | mg/kg | D | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW7471B | MERCURY | 0.027 | mg/kg | J | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-1-2-07252022 | 22G0441-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW6020B | ARSENIC | 3 | mg/kg | D | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW6020B | COPPER | 27.9 | mg/kg | D | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW6020B | LEAD | 4.83 | mg/kg | D | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW6020B | ZINC | 63.5 | mg/kg | D | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW7471B | MERCURY | 0.0375 | mg/kg | | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-2-3-07252022 | 22G0441-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW6020B | ARSENIC | 3.15 | mg/kg | D | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW6020B | COPPER | 28.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW6020B | LEAD | 5.18 | mg/kg | D | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW6020B | ZINC | 64.4 | mg/kg | D | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW7471B | MERCURY | 0.0384 | mg/kg | | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-3-4-07252022 | 22G0441-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW6020B | ARSENIC | 2.96 | mg/kg | D | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW6020B | COPPER | 24.7 | mg/kg | D | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW6020B | LEAD | 4.45 | mg/kg | D | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW6020B | ZINC | 55.9 | mg/kg | D | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW7471B | MERCURY | 0.0422 | mg/kg | | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-4-5-07252022 | 22G0441-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW6020B | ARSENIC | 2.66 | mg/kg | D | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW6020B | COPPER | 31.9 | mg/kg | D | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW6020B | LEAD | 5.65 | mg/kg | D | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW6020B | ZINC | 65.6 | mg/kg | D | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW7471B | MERCURY | 0.0444 | mg/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B32-5-6-07252022 | 22G0441-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW6020B | ARSENIC | 11.6 | mg/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW6020B | CADMIUM | 0.74 | mg/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW6020B | COPPER | 1340 | mg/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW6020B | LEAD | 310 | mg/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW6020B | ZINC | 757 | mg/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW7471B | MERCURY | 0.724 | mg/kg | | J | MSLX,MSL,MSP,LDPR | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 508 | ug/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 1450 | ug/kg | E D | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 478 | ug/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 980 | ug/kg | D | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1980 | ug/kg | D | | | ✓ |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 476 | ug/kg | D | DNR | EXC | |
| SIB-SC-H08-1-2-07/26/2022 | 22G0441-14RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| FD-20-07/26/2022 | 22G0441-15 | SW6020B | ARSENIC | 12 | mg/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW6020B | CADMIUM | 0.83 | mg/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW6020B | COPPER | 1450 | mg/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW6020B | LEAD | 367 | mg/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW6020B | ZINC | 785 | mg/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW7471B | MERCURY | 0.528 | mg/kg | | J | MSLX,MSL,MSP,LDPR | |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 405 | ug/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 1090 | ug/kg | E D | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 384 | ug/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 749 | ug/kg | D | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1470 | ug/kg | D | | | ✓ |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 419 | ug/kg | D | DNR | EXC | |
| FD-20-07/26/2022 | 22G0441-15RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW6020B | ARSENIC | 11.2 | mg/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW6020B | CADMIUM | 0.77 | mg/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW6020B | COPPER | 1290 | mg/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW6020B | LEAD | 529 | mg/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW6020B | ZINC | 798 | mg/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW7471B | MERCURY | 1.47 | mg/kg | | J | MSLX,MSL,MSP,LDPR | |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 1150 | ug/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 2680 | ug/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 1310 | ug/kg | D | | | ✓ |
| SIB-SC-H08-2-3-07262022 | 22G0441-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW6020B | ARSENIC | 17.6 | mg/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW6020B | CADMIUM | 0.99 | mg/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW6020B | COPPER | 1370 | mg/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW6020B | LEAD | 896 | mg/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW6020B | ZINC | 970 | mg/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW7471B | MERCURY | 5.37 | mg/kg | D | J | MSLX,MSL,MSP,LDPR | |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 3620 | ug/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 6640 | ug/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 5720 | ug/kg | D | | | ✓ |
| SIB-SC-H08-3-4-07262022 | 22G0441-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW6020B | ARSENIC | 22.6 | mg/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW6020B | CADMIUM | 0.87 | mg/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW6020B | COPPER | 1680 | mg/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW6020B | LEAD | 1950 | mg/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW6020B | ZINC | 1100 | mg/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW7471B | MERCURY | 7.57 | mg/kg | D | J | MSLX,MSL,MSP,LDPR | |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 3400 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|------------------------|--------|-------|----------|-----------------|-------------------|------------------------------------|
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1254 (AROCOR 1254) | 6450 | ug/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1260 (AROCOR 1260) | 1530 | ug/kg | D | | | ✓ |
| SIB-SC-H08-4-5-07262022 | 22G0441-18 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW6020B | ARSENIC | 7.73 | mg/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW6020B | CADMIUM | 0.28 | mg/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW6020B | COPPER | 568 | mg/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW6020B | LEAD | 85.3 | mg/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW6020B | ZINC | 216 | mg/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW7471B | MERCURY | 0.533 | mg/kg | | J | MSLX,MSL,MSP,LDPR | |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1248 (AROCOR 1248) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1254 (AROCOR 1254) | 323 | ug/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1260 (AROCOR 1260) | 111 | ug/kg | D | | | ✓ |
| SIB-SC-H08-5-6-07262022 | 22G0441-19 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|-----------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0441 |
| HGL Reviewer | Deanna Valdebenito 4/5/2023 |
| HGL Senior Review | Ken Rapuano 4/13/2023 |

General issues: The DV report indicated that no field blanks were associated with the samples submitted in this SDG. Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB05-07/26/2022 is the EB is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. This EB was free from contamination except for chromium; chromium is not a target analyte for sediment and no qualification is required.

PCBs as Aroclors – 8082A

Reported Results: In several cases, the qualified EDD did not have the correct entry in the “reportable_result” or “detected” fields.

1. The laboratory analyzed several samples at varying dilution factors. To indicate which dilutions to not use, the DNR qualifier was applied. The validator did not change the “reportable_result” field from Yes to No for DNR-qualified results. **The reportable_result field should be changed from Yes to No for all results qualified DNR by the validator.**
2. Detected results qualified DNR had the “detect_flag” field changed from Y to N by the validator. **Detected results qualified DNR should have the detect_flag changed from N to Y.**

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|-----------------------|------------------|---------------------|--|--------------------------------|----------------------------|
| SIB-SC-H08-1-2-07/26/2022 (5x dilution) | PCB-1254 | 1450 | DNR | Change “reportable_result” from “Yes” to “No” Change “detected” from “N” to “Y” | | |
| SIB-SC-H08-1-2-07/26/2022 (25x dilution) | PCB-1248 and PCB-1260 | varies | DNR | Change “reportable_result” from “Yes” to “No” Change “detected” from “N” to “Y” | | |
| | All ND results | varies | DNR | Change “reportable_result” from “Yes” to “No” | | |
| FD-20-07/26/2022 (5x dilution) | PCB-1254 | 1090 | DNR | Change “reportable_result” from “Yes” to “No” Change “detected” from “N” to “Y” | | |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------------|-----------------------|------------------|---------------------|--|--------------------------------|----------------------------|
| FD-20-07/26/2022 (25x dilution) | PCB-1248 and PCB-1260 | varies | DNR | Change "reportable_result" from "Yes" to "No" Change "detected" from "N" to "Y" | | |
| | All ND results | varies | DNR | Change "reportable_result" from "Yes" to "No" | | |

Metals – 6020B and 7471B

No issues noted.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22G0446 |
| Laboratory: ARI | Date: 5/23/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (5.24.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-H07-1-2-07/26/2022 | 22G0446-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H07-2-3-07/26/2022 | 22G0446-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H07-3-4-07/26/2022 | 22G0446-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H07-4-5-07/26/2022 | 22G0446-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H07-5-6-07/26/2022 | 22G0446-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-1-2-07/26/2022 | 22G0446-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-2-3-07/26/2022 | 22G0446-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-3-4-07/26/2022 | 22G0446-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-4-5-07/26/2022 | 22G0446-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-5-6-07/26/2022 | 22G0446-18 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – An issue was noted where the initial and continuing calibrations were within method requirements except for Aroclor 1260 CCV, which is low on one column only for the last bracket for SKH0223. The second column is in control. The issue is outside of 2A validation's scope, no qualifications required.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Trip Blanks – A trip blank was not submitted with the samples in this SDG.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB05-07262022 (results reported in SDG 22G0436) is associated with all sample results reported in this SDG. No Aroclors or metals were detected in this EB with the exception of chromium. Chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Surrogate Decachlorobiphenyl had high %Rs for samples SIB-SC-H07-1-2-07/26/2022, SIB-SC-H06-2-3-07/26/2022, SIB-SC-H06-3-4-07/26/2022, and SIB-SC-H06-4-5-07/26/2022; surrogates Tetrachlorometaxylene and Decachlorobiphenyl [2C] for had high %Rs for sample SIB-SC-H07-1-2-07/26/2022; and surrogate Tetrachlorometaxylene [2C] had a high %R for sample SIB-SC-H06-3-4-07/26/2022. All affected samples were analyzed with dilution factors >5x and qualification for surrogate %Rs is not required.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-H07-5-6-07/26/2022 (PCBs) and SIB-SC-H07-1-2-07/26/2022 (6020B metals). All %R and RPDs were within QAPP control limits for PCBs. The MS/MSD performed on sample SIB-SC-H07-1-2-07/26/2022 had a high RPD for lead and zinc. The NFG does not indicate action for MS/MSD RPD discrepancies; however, the RPDs for lead and zinc were within control for the laboratory duplicate performed on the same sample. Based on the weight of evidence, the judgment of the HGL reviewer is that no qualification is required.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed for 6020B metals using sample SIB-SC-H07-1-2-07/26/2022. The RPD of the duplicate pair met the acceptance criteria, with the exception of a high RPD of 25.40% for arsenic. The NFG indicate that in cases where a laboratory duplicate RPD for soil matrix samples, the validator may consider wider criteria of RPD ≤35%. The RPD for arsenic within control for the MS/MSD performed on the same sample. Based on the weight of evidence, the judgment of the HGL reviewer is that no qualification is required.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Qualifier | Interpreted Qualifier | Reason Code |
|---|---------------------------|------------|---------------|---------------------|-----------------------|-------------|
| SIB-SC-H07-1-2-07/26/2022 | None required. | | | | | |
| SIB-SC-H07-2-3-07/26/2022 | None required. | | | | | |
| SIB-SC-H07-3-4-07/26/2022 | None required. | | | | | |
| SIB-SC-H07-4-5-07/26/2022 | None required. | | | | | |
| SIB-SC-H07-5-6-07/26/2022 | None required. | | | | | |
| SIB-SC-H06-1-2-07/26/2022 | None required. | | | | | |
| SIB-SC-H06-2-3-07/26/2022 | None required. | | | | | |
| SIB-SC-H06-3-4-07/26/2022 (10x dilution) | PCB-1254 (1) | 2330 | E D | DNR | DNR | EXC |
| | PCB-1260 (1) | 2550 | E D | DNR | DNR | EXC |
| | All other PCB results | Use result | | | | |
| SIB-SC-H06-3-4-07/26/2022 (50x dilution) | PCB-1254 | 4720 | D | -- | -- | -- |
| | PCB-1260 | 2870 | D | -- | -- | -- |
| | All other PCB results (1) | Varies | Varies | DNR | DNR | EXC |
| SIB-SC-H06-4-5-07/26/2022 | None required. | | | | | |
| SIB-SC-H06-5-6-07/26/2022 | None required. | | | | | |

(1) Results qualified as DNR also have the "reportable_result" data field changed to "No".



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22G0448

May 11, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a thin horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22G0448 | SIB-SC-I06-1-2-07262022 | 22G0448-06 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-I06-2-3-07262022 | 22G0448-07 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-I06-3-4-07262022 | 22G0448-08 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-I06-4-5-07262022 | 22G0448-09 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-I06-5-6-07262022 | 22G0448-10 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-J06-1-2-07262022 | 22G0448-18 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-J06-2-3-07262022 | 22G0448-19 | SE | ✓ | ✓ | ✓ |
| 22G0448 | SIB-SC-J06-3-4-07262022 | 22G0448-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 20G0448 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. EB05-07262022 was free from all contamination..

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the method blank, %R value of DCBP was above the control limit on column 2; no qualifiers were assigned.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-I06-2-3-07/26/2022
- SIB-SC-I06-3-4-07/26/2022
- SIB-SC-I06-4-5-07/26/2022 (5x and 25x)
- SIB-SC-I06-5-6-07/26/2022 (5x and 25x)
- SIB-SC-J06-2-3-07/26/2022
- SIB-SC-J06-3-4-07/26/2022

Field Duplicates

No field duplicates were submitted.

Reported Results

Samples SIB-SC-I06-4-5-07/26/2022 and SIB-SC-I06-5-6-07/26/2022 were initially analyzed at a 5x dilution. The concentrations of AR1254 exceeded the calibration range of the instrument and were E-flagged by the laboratory. The samples were re-analyzed at a 25x dilution. The results for AR1254 should be reported from the 25x dilution; the results from the 5x dilution were qualified as do-not-

report (DNR-VJ). Results for all other Aroclors should be reported from the 5x dilution and were qualified as do-not-report (DNR-VJ) in the 25x dilution.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD RPD values.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22G0448 | 8 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this

EB were reported in ARI SDG 22G0436. Chromium was detected in this blank (0.27 µg/L). Associated field samples were not analyzed for chromium. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW6020B | ARSENIC | 10.7 | mg/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW6020B | CADMIUM | 0.86 | mg/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW6020B | COPPER | 418 | mg/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW6020B | LEAD | 73 | mg/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW6020B | ZINC | 385 | mg/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW7471B | MERCURY | 0.302 | mg/kg | | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 98.3 | ug/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 187 | ug/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 104 | ug/kg | D | | | ✓ |
| SIB-SC-I06-1-2-07/26/2022 | 22G0448-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW6020B | ARSENIC | 14.9 | mg/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW6020B | CADMIUM | 0.73 | mg/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW6020B | COPPER | 783 | mg/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW6020B | LEAD | 185 | mg/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW6020B | ZINC | 582 | mg/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW7471B | MERCURY | 0.0743 | mg/kg | | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 378 | ug/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 518 | ug/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 351 | ug/kg | D | | | ✓ |
| SIB-SC-I06-2-3-07/26/2022 | 22G0448-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW6020B | ARSENIC | 15.5 | mg/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW6020B | COPPER | 1010 | mg/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW6020B | LEAD | 244 | mg/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW6020B | ZINC | 566 | mg/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW7471B | MERCURY | 0.0869 | mg/kg | | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 367 | ug/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 204 | ug/kg | P1 D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 273 | ug/kg | D | | | ✓ |
| SIB-SC-I06-3-4-07/26/2022 | 22G0448-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW6020B | ARSENIC | 48.8 | mg/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW6020B | CADMIUM | 0.73 | mg/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW6020B | COPPER | 1240 | mg/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW6020B | LEAD | 386 | mg/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW6020B | ZINC | 823 | mg/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW7471B | MERCURY | 0.077 | mg/kg | | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 838 | ug/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 1930 | ug/kg | P1 E D | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 841 | ug/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 992 | ug/kg | D | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 2220 | ug/kg | D | | | ✓ |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 941 | ug/kg | D | DNR | EXC | |
| SIB-SC-I06-4-5-07/26/2022 | 22G0448-09RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW6020B | ARSENIC | 44.1 | mg/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW6020B | CADMIUM | 0.8 | mg/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW6020B | COPPER | 1130 | mg/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW6020B | LEAD | 251 | mg/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW6020B | ZINC | 750 | mg/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW7471B | MERCURY | 0.27 | mg/kg | | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 524 | ug/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 1100 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 510 | ug/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 644 | ug/kg | D | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 1360 | ug/kg | D | | | ✓ |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 533 | ug/kg | D | DNR | EXC | |
| SIB-SC-I06-5-6-07/26/2022 | 22G0448-10RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW6020B | ARSENIC | 10.1 | mg/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW6020B | COPPER | 535 | mg/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW6020B | LEAD | 56.2 | mg/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW6020B | ZINC | 363 | mg/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW7471B | MERCURY | 0.106 | mg/kg | | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | 86.9 | ug/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1254 (AROCOLOR 1254) | 201 | ug/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1260 (AROCOLOR 1260) | 109 | ug/kg | D | | | ✓ |
| SIB-SC-J06-1-2-07/26/2022 | 22G0448-18 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW6020B | ARSENIC | 17.6 | mg/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW6020B | CADMIUM | 0.94 | mg/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW6020B | COPPER | 880 | mg/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW6020B | LEAD | 143 | mg/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW6020B | ZINC | 813 | mg/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW7471B | MERCURY | 0.451 | mg/kg | | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1248 (AROCOLOR 1248) | 207 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1254 (AROCOLOR 1254) | 356 | ug/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1260 (AROCOLOR 1260) | 293 | ug/kg | D | | | ✓ |
| SIB-SC-J06-2-3-07/26/2022 | 22G0448-19 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW6020B | ARSENIC | 8.87 | mg/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW6020B | COPPER | 793 | mg/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW6020B | LEAD | 177 | mg/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW6020B | ZINC | 458 | mg/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW7471B | MERCURY | 0.654 | mg/kg | | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1248 (AROCOLOR 1248) | 268 | ug/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1254 (AROCOLOR 1254) | 529 | ug/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1260 (AROCOLOR 1260) | 464 | ug/kg | D | | | ✓ |
| SIB-SC-J06-3-4-07/26/2022 | 22G0448-20 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22G0448 |
| HGL Reviewer | Ken Rapuano 6/29/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The HGL reviewer moved any reason codes from the approval_code column to the dqm_remark column and updated all validated_yn cells to "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for most samples; although this was the only one of four surrogate %Rs that were out of control, all %R discrepancies were above the upper control limit by more than 20%. In accordance with the HGL Consistency Memorandum, all detected results from column 1 for samples with a surrogate discrepancy should be qualified J-SSH (unless the dilution factor is >5).

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-I06-2-3-07/26/2022 | Aroclor 1248 | 378 | -- | J | J | SSH |
| | Aroclor 1254 | 518 | -- | J | J | SSH |
| | Aroclor 1260 | 351 | -- | J | J | SSH |
| SIB-SC-I06-3-4-07/26/2022 | Aroclor 1248 | 367 | -- | J | J | SSH |
| | Aroclor 1254 | 204 | -- | J | J | SSH |
| | Aroclor 1260 | 273 | -- | J | J | SSH |
| SIB-SC-I06-4-5-07/26/2022 | Aroclor 1248 | 838 | -- | J | J | SSH |
| | Aroclor 1260 | 841 | -- | J | J | SSH |
| SIB-SC-I06-5-6-07/26/2022 | Aroclor 1248 | 524 | -- | J | J | SSH |
| SIB-SC-J06-2-3-07/26/2022 | Aroclor 1248 | 207 | -- | J | J | SSH |
| | Aroclor 1254 | 356 | -- | J | J | SSH |
| | Aroclor 1260 | 293 | -- | J | J | SSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-J06-3-4-07/26/2022 | Aroclor 1248 | 268 | -- | J | J | SSH |
| | Aroclor 1254 | 529 | -- | J | J | SSH |
| | Aroclor 1260 | 464 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0003

May 12, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|----------------------------|------------|--------|-----|--------|---------|
| 22H0003 | SIB-SC-L04-1-2-07272022 | 22H0003-02 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-LO4-2-3-7/27/2022 | 22H0003-03 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L04-3-4-07272022 | 22H0003-04 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L04-4-5-07272022 | 22H0003-05 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L04-5-6-07272022 | 22H0003-06 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-LO5-1-2--07/27/2022 | 22H0003-15 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L05-2-3-07272022 | 22H0003-16 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L05-3-4-07272022 | 22H0003-17 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L05-4-5-07272022 | 22H0003-18 | SE | ✓ | ✓ | ✓ |
| 22H0003 | SIB-SC-L05-5-6-07272022 | 22H0003-19 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0003 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The Sample IDs for two samples in the PDF and EDD do not exactly match the chain-of-custody (COC):

| SAMPLE ID ON COC | SAMPLE ID IN PDF AND EDD |
|---------------------------|----------------------------|
| SIB-SC-L04-2-3-7/27/2022 | SIB-SC-LO4-2-3-7/27/2022 |
| SIB-SC-L05-1-2-07/27/2022 | SIB-SC-LO5-1-2--07/27/2022 |

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. EB05-07262022 was free from all contamination.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-L04-3-4-07/27/2022
- SIB-SC-L04-4-5-07/27/2022
- SIB-SC-L04-5-6-07/27/2022
- SIB-SC-L05-1-2-07/27/2022
- SIB-SC-L05-2-3-07/27/2022
- SIB-SC-L05-3-4-07/27/2022

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0003 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. Chromium was detected in this blank (0.27 µg/L). Associated field samples were not analyzed for chromium. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW6020B | ARSENIC | 19.3 | mg/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW6020B | COPPER | 986 | mg/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW6020B | LEAD | 91.1 | mg/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW6020B | ZINC | 1010 | mg/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW7471B | MERCURY | 0.176 | mg/kg | | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 108 | ug/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 216 | ug/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 95.3 | ug/kg | D | | | ✓ |
| SIB-SC-L04-1-2-07/27/2022 | 22H0003-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW6020B | ARSENIC | 17.6 | mg/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW6020B | COPPER | 538 | mg/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW6020B | LEAD | 80.6 | mg/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW6020B | ZINC | 502 | mg/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW7471B | MERCURY | 0.68 | mg/kg | | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 45 | ug/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 76.7 | ug/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 78.5 | ug/kg | D | | | ✓ |
| SIB-SC-L04-2-3-7/27/2022 | 22H0003-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW6020B | ARSENIC | 7.25 | mg/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW6020B | CADMIUM | 0.68 | mg/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW6020B | COPPER | 471 | mg/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW6020B | LEAD | 97.8 | mg/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW6020B | ZINC | 395 | mg/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW7471B | MERCURY | 0.143 | mg/kg | | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 139 | ug/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 242 | ug/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 245 | ug/kg | D | | | ✓ |
| SIB-SC-L04-3-4-07/27/2022 | 22H0003-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW6020B | ARSENIC | 8.49 | mg/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW6020B | COPPER | 399 | mg/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW6020B | LEAD | 165 | mg/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW6020B | ZINC | 441 | mg/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW7471B | MERCURY | 0.827 | mg/kg | | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 519 | ug/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 690 | ug/kg | D | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-4-5-07/27/2022 | 22H0003-05RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1430 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW6020B | ARSENIC | 7.75 | mg/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW6020B | COPPER | 245 | mg/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW6020B | LEAD | 113 | mg/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW6020B | ZINC | 390 | mg/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW7471B | MERCURY | 0.0596 | mg/kg | | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 177 | ug/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 220 | ug/kg | D | | | ✓ |
| SIB-SC-L04-5-6-07/27/2022 | 22H0003-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW6020B | ARSENIC | 18.2 | mg/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW6020B | COPPER | 871 | mg/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW6020B | LEAD | 92.3 | mg/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW6020B | ZINC | 459 | mg/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW7471B | MERCURY | 0.562 | mg/kg | | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 196 | ug/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 265 | ug/kg | D | | | ✓ |
| SIB-SC-L05-1-2--07/27/2022 | 22H0003-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW6020B | ARSENIC | 15.6 | mg/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW6020B | COPPER | 574 | mg/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW6020B | LEAD | 69.5 | mg/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW6020B | ZINC | 542 | mg/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW7471B | MERCURY | 0.211 | mg/kg | | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 137 | ug/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 182 | ug/kg | D | | | ✓ |
| SIB-SC-L05-2-3-07/27/2022 | 22H0003-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW6020B | ARSENIC | 15.5 | mg/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW6020B | COPPER | 443 | mg/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW6020B | LEAD | 77.6 | mg/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW6020B | ZINC | 410 | mg/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW7471B | MERCURY | 0.495 | mg/kg | | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 163 | ug/kg | D | | | ✓ |
| SIB-SC-L05-3-4-07/27/2022 | 22H0003-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW6020B | ARSENIC | 3.55 | mg/kg | D | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW6020B | COPPER | 48.3 | mg/kg | D | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW6020B | LEAD | 9.78 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW6020B | ZINC | 73.6 | mg/kg | D | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW7471B | MERCURY | 0.129 | mg/kg | | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 38 | ug/kg | D | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-4-5-07/27/2022 | 22H0003-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW6020B | ARSENIC | 4.14 | mg/kg | D | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW6020B | COPPER | 39.9 | mg/kg | D | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW6020B | LEAD | 9.94 | mg/kg | D | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW6020B | ZINC | 71.2 | mg/kg | D | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW7471B | MERCURY | 0.158 | mg/kg | | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.6 | ug/kg | | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L05-5-6-07/27/2022 | 22H0003-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0003 |
| HGL Reviewer | Ken Rapuano 9/25/2023 |
| HGL Peer Review | Justin Hersh 9/26/2023 |

General issues: The HGL reviewer moved any reason codes from the approval_code column to the dqm_remark column and updated all validated_yn cells to "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for most samples; although this was the only one of four surrogate %Rs that were out of control, all %R discrepancies were above the upper control limit by more than 20% and in accordance with the HGL Consistency Memorandum, all detected results from column 1 for this samples with a surrogate discrepancy be qualified J-SSH (unless the dilution factor is >5).

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|----------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-L04-3-4-07/27/2022 | Aroclor 1248 | 139 | -- | J | J | SSH |
| | Aroclor 1260 | 245 | -- | J | J | SSH |
| SIB-SC-L04-4-5-07/27/2022 | Aroclor 1248 | 519 | -- | J | J | SSH |
| | Aroclor 1260 | 690 | -- | J | J | SSH |
| SIB-SC-L05-1-2--07/27/2022 | Aroclor 1248 | 196 | -- | J | J | SSH |
| | Aroclor 1254 | 472 | -- | J | J | SSH |
| | Aroclor 1260 | 265 | -- | J | J | SSH |
| SIB-SC-L05-3-4-07/27/2022 | Aroclor 1248 | 125 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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Prepared by:

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EcoChem Project: C28601-1

SDG: 22H0005

May 12, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22H0005 | SIB-SC-J06-4-5-07262022 | 22H0005-01 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-J06-5-6-07262022 | 22H0005-02 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-K04-1-2-07272022 | 22H0005-10 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-K04-2-3-07272022 | 22H0005-11 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-K04-3-4-07272022 | 22H0005-12 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-K04-4-5-07272022 | 22H0005-13 | SE | ✓ | ✓ | ✓ |
| 22H0005 | SIB-SC-K04-5-6-07272022 | 22H0005-14 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0005 | 7 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Standard Reference Material (SRM) | ✓ | Target Analyte List |
| ✓ | Matrix Spike/Matrix Spike Duplicate (MS/MSD) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. EB05-07262022 was free from all contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-J06-4-5-07/26/2022
- SIB-SC-J06-5-6-07/26/2022
- SIB-SC-K04-2-3-07/27/2022 MS

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Two samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, SRM, and matrix spike/matrix spike suplicate (MS/MSD) recoveries. Precision was acceptable based on the MS/MSD and LCS/LCSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0005 | 7 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. Chromium was detected in this blank (0.27 µg/L). Associated field samples were not analyzed for chromium. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW6020B | ARSENIC | 10.6 | mg/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW6020B | CADMIUM | 0.64 | mg/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW6020B | COPPER | 641 | mg/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW6020B | LEAD | 422 | mg/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW6020B | ZINC | 480 | mg/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW7471B | MERCURY | 1.19 | mg/kg | | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 1360 | ug/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 3100 | ug/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 1360 | ug/kg | D | | | ✓ |
| SIB-SC-J06-4-5-07/26/2022 | 22H0005-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW6020B | ARSENIC | 15.2 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW6020B | CADMIUM | 0.9 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW6020B | COPPER | 1040 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW6020B | LEAD | 611 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW6020B | ZINC | 730 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW7471B | MERCURY | 3.27 | mg/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 1390 | ug/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 2540 | ug/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 853 | ug/kg | D | | | ✓ |
| SIB-SC-J06-5-6-07/26/2022 | 22H0005-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW6020B | ARSENIC | 3.82 | mg/kg | D | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW6020B | COPPER | 23.7 | mg/kg | D | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW6020B | LEAD | 6.5 | mg/kg | D | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW6020B | ZINC | 62.5 | mg/kg | D | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW7471B | MERCURY | 0.0343 | mg/kg | | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.1 | ug/kg | | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.3 | ug/kg | | | | ✓ |
| SIB-SC-K04-1-2-07/27/2022 | 22H0005-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW6020B | ARSENIC | 2.41 | mg/kg | D | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW6020B | COPPER | 17 | mg/kg | D | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW6020B | LEAD | 5.34 | mg/kg | D | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW6020B | ZINC | 53.9 | mg/kg | D | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW7471B | MERCURY | 0.0782 | mg/kg | | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.2 | ug/kg | | | | ✓ |
| SIB-SC-K04-2-3-07/27/2022 | 22H0005-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW6020B | ARSENIC | 3.81 | mg/kg | D | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW6020B | CADMIUM | 0.3 | mg/kg | D | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW6020B | COPPER | 38.4 | mg/kg | D | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW6020B | LEAD | 16.7 | mg/kg | D | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW6020B | ZINC | 101 | mg/kg | D | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW7471B | MERCURY | 0.249 | mg/kg | | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 5.5 | ug/kg | | | | ✓ |
| SIB-SC-K04-3-4-07/27/2022 | 22H0005-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW6020B | ARSENIC | 3.16 | mg/kg | D | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW6020B | COPPER | 27.7 | mg/kg | D | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW6020B | LEAD | 10.6 | mg/kg | D | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW6020B | ZINC | 73.9 | mg/kg | D | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW7471B | MERCURY | 0.0921 | mg/kg | | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-4-5-07/27/2022 | 22H0005-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW6020B | ARSENIC | 2.73 | mg/kg | D | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW6020B | COPPER | 24.4 | mg/kg | D | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW6020B | LEAD | 5.28 | mg/kg | D | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW6020B | ZINC | 59 | mg/kg | D | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW7471B | MERCURY | 0.0255 | mg/kg | J | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-K04-5-6-07/27/2022 | 22H0005-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0005 |
| HGL Reviewer | Ken Rapuano 6/29/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The HGL reviewer moved any reason codes from the approval_code column to the dqm_remark column and updated all validated_yn cells to "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for samples SIB-SC-J06-4-5-07/26/2022 and SIB-SC-J06-5-6-07/26/2022; although this was the only one of four surrogate %Rs that were out of control, both %R discrepancies were above the upper control limit by more than 20%. The dilution factor for both samples is >5, however, and no additional qualification is required.

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0006

May 24, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0006 | SIB-SC-K03-1-2-07272022 | 22H0006-02 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-K03-2-3-07272022 | 22H0006-03 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-K03-3-4-07272022 | 22H0006-04 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-K03-4-5-07272022 | 22H0006-05 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-K03-5-6-07272022 | 22H0006-06 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-L03-1-2-07272022 | 22H0006-11 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SO | ✓ | ✓ | ✓ |
| 22H0006 | FD-21-07/27/2022 | 22H0006-13 | SO | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-L03-3-4-07272022 | 22H0006-14 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-L03-4-5-07272022 | 22H0006-15 | SE | ✓ | ✓ | ✓ |
| 22H0006 | SIB-SC-L03-5-6-07272022 | 22H0006-16 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0006 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

Samples SIB-SC-L03-2-3-07/27/2022 and FD-21-07/27/2022 were listed as sediment on the chain-of-custody but are listed as soils in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. EB05-07262022 was free from all contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-K03-1-2-07/27/2022
- SIB-SC-K03-2-3-07/27/2022
- SIB-SC-K03-3-4-07/27/2022
- SIB-SC-K03-5-6-07/27/2022
- SIB-SC-L03-4-5-07/27/2022
- SIB-SC-L03-3-4-07/27/2022 MS

For Sample SIB-SC-L03-5-6-07/27/2022, the %R values of DCBP were greater than the upper control limit on both columns. Positive results were estimated (J-SSH).

For Batch BKH0055, the method blank and laboratory control sample had a single surrogate outlier. No action was taken.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For waters, the difference must be less than the RL. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-L03-07/27/2022 & FD-21-07/27/2022, was submitted. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Data were qualified for surrogate outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of the data from the analysis of soil and sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|---------------------|------------------|
| 22H0006 | 9 Sediment & 2 Soil | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|--|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| 1 | Laboratory Control Samples / Standard Reference Material (SRM) | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB05-07262022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0436. Chromium was detected in this blank (0.27 µg/L). Associated field samples were not analyzed for chromium. No data were qualified.

Laboratory Control Samples / Standard Reference Material

The standard reference material (SRM) for batch BKH0378 was recovered slightly above the upper control limit. The %R was 141% and the UCL is 140%. This discrepancy is nominal, and no additional qualification is required.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH). For %R values less than 30%, indicating an extreme low bias, then associated results were estimated (J/UJ-MSLX).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKH0379, MS/MSD samples were analyzed using Sample SIB-SC-L03-3-4-07272022. Mercury was not recovered in the MS sample but was in control in the associated MSD sample; associated results were estimated (J-MSLX). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

For Batch BKI0102, MS/MSD samples were analyzed using Sample SIB-SC-L03-3-4-07272022. Lead and arsenic MS/MSD recoveries were less than the lower control limit; associated field samples were estimated (J-MSL).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKI0102, Sample SIB-SC-L03-3-4-07272022 was used for the lab duplicate. The RPD value for arsenic was greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-L03-2-3-07/27/2022 & FD-21-07/27/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as a laboratory duplicate precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW6020B | ARSENIC | 8.32 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW6020B | COPPER | 322 | mg/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW6020B | LEAD | 56.8 | mg/kg | D | J | MSL | |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW6020B | ZINC | 340 | mg/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW7471B | MERCURY | 0.283 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 96.2 | ug/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 194 | ug/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 137 | ug/kg | D | | | ✓ |
| SIB-SC-K03-1-2-07/27/2022 | 22H0006-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW6020B | ARSENIC | 6.38 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW6020B | COPPER | 129 | mg/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW6020B | LEAD | 116 | mg/kg | D | J | MSL | |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW6020B | ZINC | 458 | mg/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW7471B | MERCURY | 0.424 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.2 | ug/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 166 | ug/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-K03-2-3-07/27/2022 | 22H0006-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW6020B | ARSENIC | 8.05 | mg/kg | D | J | MSL,LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW6020B | CADMIUM | 0.6 | mg/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW6020B | COPPER | 151 | mg/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW6020B | LEAD | 75.7 | mg/kg | D | J | MSL | |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW6020B | ZINC | 302 | mg/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW7471B | MERCURY | 0.583 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 218 | ug/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 156 | ug/kg | D | | | ✓ |
| SIB-SC-K03-3-4-07/27/2022 | 22H0006-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW6020B | ARSENIC | 4.31 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW6020B | COPPER | 50.3 | mg/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW6020B | LEAD | 47.9 | mg/kg | D | J | MSL | |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW7471B | MERCURY | 0.553 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 25.6 | ug/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 55.2 | ug/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 67.7 | ug/kg | D | | | ✓ |
| SIB-SC-K03-4-5-07/27/2022 | 22H0006-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW6020B | ARSENIC | 4.61 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW6020B | CADMIUM | 0.23 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW6020B | COPPER | 47 | mg/kg | D | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW6020B | LEAD | 26.8 | mg/kg | D | J | MSL | |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW6020B | ZINC | 115 | mg/kg | D | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW7471B | MERCURY | 0.211 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 46.7 | ug/kg | D | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.2 | ug/kg | D | | | ✓ |
| SIB-SC-K03-5-6-07/27/2022 | 22H0006-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW6020B | ARSENIC | 5.54 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW6020B | COPPER | 130 | mg/kg | D | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW6020B | LEAD | 16.9 | mg/kg | D | J | MSL | |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW6020B | ZINC | 146 | mg/kg | D | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW7471B | MERCURY | 0.103 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 6.1 | ug/kg | | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 7.5 | ug/kg | | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 14.7 | ug/kg | | | | ✓ |
| SIB-SC-L03-1-2-07/27/2022 | 22H0006-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW6020B | ARSENIC | 9.68 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW6020B | CADMIUM | 0.24 | mg/kg | D | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW6020B | COPPER | 182 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW6020B | LEAD | 23.7 | mg/kg | D | J | MSL | |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW6020B | ZINC | 221 | mg/kg | D | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW7471B | MERCURY | 0.128 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 17.9 | ug/kg | D J | | | ✓ |
| SIB-SC-L03-2-3-07/27/2022 | 22H0006-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW6020B | ARSENIC | 11 | mg/kg | D | J | MSL,LDPR | |
| FD-21-07/27/2022 | 22H0006-13 | SW6020B | CADMIUM | 0.26 | mg/kg | D | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW6020B | COPPER | 285 | mg/kg | D | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW6020B | LEAD | 33.7 | mg/kg | D | J | MSL | |
| FD-21-07/27/2022 | 22H0006-13 | SW6020B | ZINC | 367 | mg/kg | D | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW7471B | MERCURY | 0.126 | mg/kg | | J | MSLX,MSP | |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 8.6 | ug/kg | | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 12 | ug/kg | | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 15.9 | ug/kg | | | | ✓ |
| FD-21-07/27/2022 | 22H0006-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW6020B | ARSENIC | 39.3 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW6020B | CADMIUM | 0.69 | mg/kg | D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW6020B | COPPER | 570 | mg/kg | D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW6020B | LEAD | 91.1 | mg/kg | D | J | MSL | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW6020B | ZINC | 720 | mg/kg | D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW7471B | MERCURY | 0.201 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 33.1 | ug/kg | P1 D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 44.3 | ug/kg | D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 42.7 | ug/kg | D | | | ✓ |
| SIB-SC-L03-3-4-07/27/2022 | 22H0006-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW6020B | ARSENIC | 9.52 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW6020B | COPPER | 327 | mg/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW6020B | LEAD | 78.3 | mg/kg | D | J | MSL | |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW6020B | ZINC | 352 | mg/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW7471B | MERCURY | 1.98 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 236 | ug/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 413 | ug/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 301 | ug/kg | D | | | ✓ |
| SIB-SC-L03-4-5-07/27/2022 | 22H0006-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW6020B | ARSENIC | 6.79 | mg/kg | D | J | MSL,LDPR | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW6020B | COPPER | 203 | mg/kg | D | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW6020B | LEAD | 91.7 | mg/kg | D | J | MSL | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW6020B | ZINC | 353 | mg/kg | D | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW7471B | MERCURY | 0.977 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 267 | ug/kg | D | J | SSH | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 325 | ug/kg | D | J | SSH | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 448 | ug/kg | D | J | SSH | |
| SIB-SC-L03-5-6-07/27/2022 | 22H0006-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0006 |
| HGL Reviewer | Ken Rapuano 6/29/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; for all samples except SIB-SC-L03-4-5-07/27/2022 and SIB-SC-L03-5-6-07/27/2022 this was the only one of four surrogate %Rs that were out of control and the %R discrepancies were above the upper control limit by less than 20%. For sample SIB-SC-L03-4-5-07/27/2022, the DCB %R was >20% above the upper control limit and all detected Aroclor results for this sample should be qualified J-SSH. For sample SIB-SC-L03-5-6-07/27/2022, DCB was out of control on both columns and the validator correctly applied J-SSH to all detected results for this sample.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-L03-4-5-07/27/2022 | Aroclor 1248 | 236 | -- | J | J | SSH |
| | Aroclor 1254 | 413 | -- | J | J | SSH |
| | Aroclor 1260 | 301 | -- | J | J | SSH |

Metals – 6020B and 7471B

MS/MSD: The validator applied J-MSLX,MSP to all mercury results reported in this SDG instead of just to the mercury results from batch BKH0379. The J-MSLX,MSP qualification should be removed from the mercury results reported for samples SIB-SC-K03-5-6-07/27/2022, SIB-SC-L03-1-2-07/27/2022, SIB-SC-L03-2-3-07/27/2022, FD-21-07/27/2022, SIB-SC-L03-4-5-07/27/2022, and SIB-SC-L03-5-6-07/27/2022 that were prepared in batch BKH0378.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-K03-5-6-07/27/2022 | Mercury | 0.211 | J | -- | -- | -- |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-L03-1-2-07/27/2022 | Mercury | 0.103 | J | -- | -- | -- |
| SIB-SC-L03-2-3-07/27/2022 | Mercury | 0.128 | J | -- | -- | -- |
| FD-21-07/27/2022 | Mercury | 0.126 | J | -- | -- | -- |
| SIB-SC-L03-4-5-07/27/2022 | Mercury | 1.98 | J | -- | -- | -- |
| SIB-SC-L03-5-6-07/27/2022 | Mercury | 0.977 | J | -- | -- | -- |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0066

May 24, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of full review (EPA Stage 3 and 4) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0066 | SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SE | ✓ | ✓ | ✓ |
| 22H0066 | FD-22-07/28/2022 | 22H0066-03 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I08-2-3-07282022 | 22H0066-04 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I08-3-4-07282022 | 22H0066-05 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I08-4-5-07282022 | 22H0066-06 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I08-5-6-07282022 | 22H0066-07 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-P07-0-1-07282022 | 22H0066-17 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-P07-1-2-07282022 | 22H0066-18 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-P07-2-3-07282022 | 22H0066-19 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-P07-3-3.9-07282022 | 22H0066-20 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I05-1-2-07282022 | 22H0066-22 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I05-2-3-07282022 | 22H0066-23 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I05-3-4-07282022 | 22H0066-24 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I05-4-5-07282022 | 22H0066-25 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-I05-5-6-07282022 | 22H0066-26 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D12-1-2-08022022 | 22H0066-35 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D12-2-3-08022022 | 22H0066-36 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D12-3-4-08022022 | 22H0066-37 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D12-4-5-08022022 | 22H0066-38 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D12-5-6-08022022 | 22H0066-39 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SE | ✓ | ✓ | ✓ |
| 22H0066 | FD-23-08/02/2022 | 22H0066-47 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D13-2-3-08022022 | 22H0066-48 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D13-3-4-08022022 | 22H0066-49 | SE | ✓ | ✓ | ✓ |
| 22H0066 | SIB-SC-D13-4-5-08022022 | 22H0066-50 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0066 | 25 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|-----------------------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Internal Standards |
| ✓ | Initial Calibration (ICAL) | 1 | Field Duplicates |
| 1 | Continuing Calibration (CCAL) | 1 | Standard Reference Material (SRM) |
| ✓ | Laboratory Blanks | ✓ | Target Analyte List |
| 1 | Field Blanks | 1 | Reporting Limits |
| 2 | Surrogate Compounds | 2 | Compound Identification |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | 2 | Reported Results |
| 1 | Laboratory Control Samples (LCS/LCSD) | 1 | Calculation Verification |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Continuing Calibration (CCAL)

Continuing calibration (CCAL) standards were analyzed at the required frequency. With the noted exceptions, all percent difference (%D) values were within the $\pm 20\%$ control limit.

For the continuing calibration verifications (CCALs) analyzed on 8/18/22 at 22:05 and 8/19/22 at 02:22, the %D values for AR1260 were outside the control limit on column 2, indicating a potential high bias. AR1260 results for the associated samples were reported from column 1; no qualifiers were assigned.

For several CCAL standards, the %D values for one or more surrogate compounds were outside the control limits, indicating a potential high bias. Qualifiers are not assigned to surrogate compounds; no action was taken.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB05-07262022 and EB06-08042022 is associated with the samples with results reported in this SDG; results for these EBs were reported in ARI SDGs 22G0436 and 22H0215. All results were free from contamination. No data were qualified.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. Qualifiers are not assigned to laboratory QC samples.

Several samples were diluted beyond a level of accurate quantitation of the surrogates and were flagged by the laboratory (D1). No action.

For several samples, the surrogate %R values for DCBP were greater than the upper control limit on one column; no qualifiers were assigned for the single outliers.

The following outliers resulted in qualification.

| SAMPLE | TCMX %R OUTLIER | | DCBP %R OUTLIER | | QUALIFIER |
|--------------------------------|-----------------|----------|-----------------|----------|--|
| | Column 1 | Column 2 | Column 1 | Column 2 | |
| SIB-SC-I08-3-4-07/28/2022 | OK | OK | 220 | 141 | J-SSH |
| SIB-SC-I08-4-5-07/28/2022 (5x) | OK | OK | 366 | 155 | J-SSH |
| SIB-SC-I05-3-4-07/28/2022 (5x) | OK | 141 | 365 | 129 | None Positive results reported from 25x |
| SIB-SC-I05-4-5-07/28/2022 (5x) | OK | 134 | 459 | OK | None Positive results reported from 25x |
| SIB-SC-I05-5-6-07/28/2022 | OK | 137 | 207 | OK | J-SSH |
| SIB-SC-D12-1-2-08/02/2022 | OK | 135 | 226 | OK | J-SSH |
| SIB-SC-D12-2-3-08/02/2022 | OK | 129 | 210 | OK | J-SSH |
| SIB-SC-D12-4-5-08/02/2022 | OK | 123 | 148 | OK | J-SSH |
| SIB-SC-D13-2-3-08/02/2022 | OK | 122 | 252 | OK | J-SSH |
| SIB-SC-D13-4-5-08/02/2022 | OK | OK | 213 | 146 | J-SSH |

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD percent recovery (%R) values. No action is taken if the concentration in the parent sample is greater than 4x the spike concentration. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

For Batch BKH0167, Sample SIB-SC-I08-2-3-07/28/2022 was used for the MS/MSD analyses. The %R values for AR1016 were greater than the upper control limit in the MS/MSD. No positive results were detected in the parent sample for the associated Aroclors; no qualifiers were assigned. The %R values for AR1260 were less than the lower control limit for the MS/MSD; however, the parent sample concentration was greater than 4x the spike concentration; no qualifiers were assigned.

For Batch BKH0168, sample SIB-SC-D13-2-3-08/02/2022 was used for the MS/MSD analyses. Results for AR1260 were much less than the lower control limit in the MS/MSD, indicating a potential low bias. Results for the associated Aroclors in the parent sample were qualified (J/UJ-MSLX).

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

Laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were analyzed at the required frequency. No action is taken unless both the LCS and LCSD %R values are outside the control limits. Precision is evaluated using the RPD values calculated between the LCS and LCSD

results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. With the noted exceptions, all %R and RPD values were within the control limits.

For Batch BKH0168, the %R values for AR1016 and AR1260 were greater than the upper control limits for the LCS but within the control limits for the LCSD. No qualifiers were assigned for the single outliers.

Internal Standards

Internal standards (IS) were added to all samples and laboratory QC samples. With the noted exceptions, all internal standard areas were within 50 – 200% of the associated continuing calibration standard.

For the following samples, the area for hexabromobiphenyl was less than the lower control limit.. This internal standard is used to quantitate AR1260, AR1262, and AR1268; therefore, results for these Aroclors were estimated (J/UJ-IRL). No qualifiers were assigned to laboratory QC samples with internal standard outliers.

| SAMPLES | |
|--------------------------------|---------------------------|
| SIB-SC-I08-2-3-07/28/2022 (5x) | SIB-SC-D12-2-3-08/02/2022 |
| SIB-SC-I05-3-4-07/28/2022 (5x) | SIB-SC-D12-3-4-08/02/2022 |
| SIB-SC-I05-4-5-07/28/2022 (5x) | SIB-SC-D13-1-2-08/02/2022 |
| SIB-SC-P07-0-1-07/28/2022 | FD-23-08/02/2022 |
| SIB-SC-P07-2-3-07/28/2022 | SIB-SC-D13-2-3-08/02/2022 |
| SIB-SC-P07-3-3.9-07/28/2022 | SIB-SC-D13-3-4-08/02/2022 |
| SIB-SC-D12-1-2-08/02/2022 | SIB-SC-D13-4-5-08/02/2022 |

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted:

- SIB-SC-J08-07/28/2022 & FD-22-07/28/2022
- SIB-SC-D13-1-2-08/02/2022 & FD-23-08/02/2022

Field precision was acceptable.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. With the noted exception, all concentrations were within the advisory limits of 41 – 180 ug/Kg.

For Batch BKH0168-SRM1, the concentration AR1260 was greater than the upper control limit, however limits provided by the manufacturer are advisory only. The QAPP did not address reference materials; no action was taken based on the SRM recovery.

Reporting Limits

Most samples were analyzed at a 5x dilution due sample matrix. Several samples were re-analyzed at a 25x dilution due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

Compound Identification

With the noted exception, the second column confirmation relative percent difference (RPD) values were less than 40%.

For Samples SIB-SC-I05-3-4-07/28/2022 (5x) and SIB-SC-I05-4-5-07/28/2022 (5x), the RPD value for Aroclor 1260 was greater than the control limit. AR1260 results for these samples were reported from the 25x dilution; no qualifiers were assigned. For Sample SIB-SC-D12-5-6-08/02/2022, the RPD value of AR1248 was greater than the control limit. This result was estimated (J-CF).

Reported Results

The following samples were initially analyzed at a 5x dilution. The concentrations of one or more Aroclors exceeded the calibration range of the instrument and were E-flagged by the laboratory. The samples were re-analyzed at a 25x dilution. The following results should be reported from the 25x dilution; the results from the 5x dilution were qualified as do-not-report (DNR-VJ). Results for all other Aroclors should be reported from the 5x dilution and were qualified as do-not-report (DNR-VJ) in the 25x dilution.

| Sample | Aroclor(s) | Comment |
|---------------------------|--------------------|-----------------|
| SIB-SC-I08-1-2-07/28/2022 | 1254 | Report from 25x |
| FD-22-07/28/2022 | 1254 | Report from 25x |
| SIB-SC-I08-2-3-07/28/2022 | 1254, 1260 | Report from 25x |
| SIB-SC-I05-2-3-07/28/2022 | 1254 | Report from 25x |
| SIB-SC-I05-3-4-07/28/2022 | 1248, 1254, 1260 | Report from 25x |
| SIB-SC-I05-4-5-07/28/2022 | 1248, 1254, AR1260 | Report from 25x |

Sample SIB-SC-I08-4-5-07/28/2022 was analyzed at a 5x and 25x dilution. Results from the 5x dilution should be used. Results from the 25x dilution were qualified as do-not-report (DNR-VJ).

Calculation Verification

Calculation verifications were performed for this SDG. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD percent recovery values. Precision was also acceptable as demonstrated by the field duplicate, LCS/LCSD and MS/MSD relative percent difference values.

Results were estimated due to internal standard, surrogate and MS/MSD accuracy outliers.

Results were qualified as do-not-report (DNR) to indicate which of multiple results should be used.

Results that were qualified DNR should not be used for any reason. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of analytical data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES AND MATRIX | VALIDATION LEVEL |
|---------|------------------------------|------------------|
| 22H0066 | 25 Sediment | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The method 6020B total quantitation reports were redacted for this SDG. The laboratory was contacted and resubmitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

| | | | |
|---|---|---|---|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | ICP-MS Tune | ✓ | ICP-MS Internal standards |
| ✓ | Initial Calibration | ✓ | Interference Check Samples |
| ✓ | Calibration Verification | ✓ | Serial Dilutions |
| ✓ | CRDL Standards | 1 | Field Duplicates |
| 1 | Laboratory Blanks | 1 | Reporting Limits |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS)/Standard Reference Materials (SRM) | 1 | Calculation Verification (Full validation only) |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-MBH). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J-MBL) and non-detects are estimated (UJ-MBL) to indicate a potential low bias.

Mercury was detected in the method blank, BKH0478. All sample results were greater than the action level. No data were qualified.

Several instrument blanks on 9/23/22 had detected responses for copper and zinc. All associated sample results were greater than the 5x action levels; no data were qualified.

Several instrument blanks on 9/28/22 had detected responses for lead. All associated sample results were greater than the 5x action level; no data were qualified.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB05-07262022 and EB06-08042022 is associated with the samples with results reported in this SDG; results for these EBs were reported in ARI SDGs 22G0436 and 22H0215. Chromium was detected in EB05-07262022 (0.27 µg/L). Associated field samples were not analyzed for chromium. No data were qualified.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH). For %R values less than 30%, indicating an extreme low bias, then associated results were estimated (J/UJ-MSLX).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For the mercury analyses batch BKH0477, Sample SIB-SC-I08-2-3-07/28/2022 was analyzed as the matrix spike. The mercury recovery in the MS sample was less than the lower control limit and was much higher than the upper control limit; associated sample results were estimated (J-MSL,MSH). The RPD value for mercury was greater than the control limit; associated field sample results were estimated (J-MSP) to indicate the heterogeneity of the analytical results.

For the mercury analyses batch BKH0478, Sample SIB-SC-D13-2-3-08/02/2022 was analyzed as the matrix spike. The mercury recovery in the MS sample was greater than the upper control limit and was much lower than the lower control limit; associated sample results were estimated (J-MSH,MSLX). The RPD value for mercury was greater than the control limit; associated field sample results were estimated (J-MSP) to indicate the heterogeneity of the analytical results.

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKH0477, Sample SIB-SC-I08-2-3-07/28/2022 was used for the lab duplicate. The RPD value for mercury was greater than the control limit; results in this batch were estimated (J-LDPR).

For Batch BKH0478, Sample SIB-SC-D13-2-3-08/02/2022 was used for the lab duplicate. The RPD value for mercury was greater than the control limit; results in this batch were estimated (J-LDPR).

For Batch BKI0419, Sample SIB-SC-I08-2-3-07/28/2022 was used for the lab duplicate. The RPD value for copper was greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

The RPD control limit is 50% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

Two sets of field duplicates, SIB-SC-I08-1-2-07/28/2022 & FD-22-07/28/2022 and SIB-SC-D13-1-2-08/02/2022 & FD-23-08/02/2022, were submitted. All acceptance criteria were met.

Reporting Limits

One or more reporting limits were elevated from the QAPP limits due to required dilutions.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control samples and MS/MSD %R values and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as laboratory duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW6020B | ARSENIC | 18.5 | mg/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW6020B | CADMIUM | 1.31 | mg/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW6020B | COPPER | 1650 | mg/kg | D | J | LDPR | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW6020B | LEAD | 1090 | mg/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW6020B | ZINC | 1150 | mg/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW7471B | MERCURY | 8.21 | mg/kg | D | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 3290 | ug/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 6550 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 2810 | ug/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3570 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 9190 | ug/kg | D | | | ✓ |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 3170 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-1-2-07/28/2022 | 22H0066-02RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03 | SW6020B | ARSENIC | 17.4 | mg/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW6020B | CADMIUM | 1.3 | mg/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW6020B | COPPER | 1530 | mg/kg | D | J | LDPR | |
| FD-22-07/28/2022 | 22H0066-03 | SW6020B | LEAD | 1050 | mg/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW6020B | ZINC | 1200 | mg/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW7471B | MERCURY | 8.54 | mg/kg | D | J | MSL,MSH,MSP,LDPR | |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 3430 | ug/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 6890 | ug/kg | E D | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 2970 | ug/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 3670 | ug/kg | D | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 9140 | ug/kg | D | | | ✓ |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 3670 | ug/kg | D | DNR | EXC | |
| FD-22-07/28/2022 | 22H0066-03RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW6020B | ARSENIC | 11.4 | mg/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW6020B | CADMIUM | 0.8 | mg/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW6020B | COPPER | 897 | mg/kg | D | J | LDPR | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW6020B | LEAD | 409 | mg/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW6020B | ZINC | 696 | mg/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW7471B | MERCURY | 0.135 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 598 | ug/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 1080 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 476 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|------------------|------------------------------------|
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 575 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1330 | ug/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 484 | ug/kg | D | | | ✓ |
| SIB-SC-I08-2-3-07/28/2022 | 22H0066-04RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW6020B | ARSENIC | 16.7 | mg/kg | D | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW6020B | CADMIUM | 0.96 | mg/kg | D | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW6020B | COPPER | 1200 | mg/kg | D | J | LDPR | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW6020B | LEAD | 768 | mg/kg | D | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW6020B | ZINC | 1050 | mg/kg | D | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW7471B | MERCURY | 0.217 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 974 | ug/kg | D | J | SSH | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 2110 | ug/kg | D | J | SSH | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 1060 | ug/kg | D | J | SSH | |
| SIB-SC-I08-3-4-07/28/2022 | 22H0066-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW6020B | ARSENIC | 35.8 | mg/kg | D | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW6020B | CADMIUM | 0.99 | mg/kg | D | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW6020B | COPPER | 1320 | mg/kg | D | J | LDPR | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW6020B | LEAD | 426 | mg/kg | D | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW6020B | ZINC | 791 | mg/kg | D | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW7471B | MERCURY | 18.6 | mg/kg | D | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 2180 | ug/kg | D | J | SSH | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 4510 | ug/kg | D | J | SSH | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 1450 | ug/kg | D | J | SSH | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

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|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 2130 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 5940 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1450 | ug/kg | D | DNR | EXC | |
| SIB-SC-I08-4-5-07/28/2022 | 22H0066-06RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW6020B | ARSENIC | 31.7 | mg/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW6020B | CADMIUM | 1.95 | mg/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW6020B | COPPER | 750 | mg/kg | D | J | LDPR | |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW6020B | LEAD | 506 | mg/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW6020B | ZINC | 758 | mg/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW7471B | MERCURY | 8.82 | mg/kg | D | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 1500 | ug/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 2930 | ug/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 850 | ug/kg | D | | | ✓ |
| SIB-SC-I08-5-6-07/28/2022 | 22H0066-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW6020B | ARSENIC | 6.82 | mg/kg | D | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW6020B | CADMIUM | 0.21 | mg/kg | D | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW6020B | COPPER | 218 | mg/kg | D | J | LDPR | |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW6020B | LEAD | 16.8 | mg/kg | D | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW6020B | ZINC | 179 | mg/kg | D | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW7471B | MERCURY | 0.0688 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | UJ | IRL | |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 8.9 | ug/kg | | | | ✓ |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 7.4 | ug/kg | | J | IRL | |
| SIB-SC-P07-0-1-07/28/2022 | 22H0066-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | UJ | IRL | |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW6020B | ARSENIC | 19.6 | mg/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW6020B | CADMIUM | 0.8 | mg/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW6020B | COPPER | 2330 | mg/kg | D | J | LDPR | |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW6020B | LEAD | 122 | mg/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW6020B | ZINC | 1420 | mg/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW7471B | MERCURY | 0.128 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 28.5 | ug/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 31.7 | ug/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 35.8 | ug/kg | D | | | ✓ |
| SIB-SC-P07-1-2-07/28/2022 | 22H0066-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW6020B | ARSENIC | 159 | mg/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW6020B | CADMIUM | 1.77 | mg/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW6020B | COPPER | 4610 | mg/kg | D | J | LDPR | |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW6020B | LEAD | 354 | mg/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW6020B | ZINC | 3720 | mg/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW7471B | MERCURY | 0.142 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 74.1 | ug/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 146 | ug/kg | D | | | ✓ |
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.4 | ug/kg | D | J | IRL | |

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Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-----------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-P07-2-3-07/28/2022 | 22H0066-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW6020B | ARSENIC | 41.1 | mg/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW6020B | COPPER | 2320 | mg/kg | D | J | LDPR | |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW6020B | LEAD | 115 | mg/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW6020B | ZINC | 1260 | mg/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW7471B | MERCURY | 0.202 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 70.3 | ug/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 61 | ug/kg | D | J | IRL | |
| SIB-SC-P07-3-3.9-07/28/2022 | 22H0066-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW6020B | ARSENIC | 12.7 | mg/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW6020B | COPPER | 679 | mg/kg | D | J | LDPR | |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW6020B | LEAD | 130 | mg/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW6020B | ZINC | 376 | mg/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW7471B | MERCURY | 0.41 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 215 | ug/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 446 | ug/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 192 | ug/kg | D | | | ✓ |
| SIB-SC-I05-1-2-07/28/2022 | 22H0066-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW6020B | ARSENIC | 37.9 | mg/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW6020B | CADMIUM | 0.72 | mg/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW6020B | COPPER | 1220 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW6020B | LEAD | 297 | mg/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW6020B | ZINC | 832 | mg/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW7471B | MERCURY | 1.56 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 644 | ug/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 1280 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 475 | ug/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 629 | ug/kg | D | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1680 | ug/kg | D | | | ✓ |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 570 | ug/kg | D | DNR | EXC | |
| SIB-SC-I05-2-3-07/28/2022 | 22H0066-23RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW6020B | ARSENIC | 34.2 | mg/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW6020B | CADMIUM | 0.77 | mg/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW6020B | COPPER | 1070 | mg/kg | D | J | LDPR | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW6020B | LEAD | 291 | mg/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW6020B | ZINC | 810 | mg/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW7471B | MERCURY | 0.768 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 1260 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 2680 | ug/kg | E D | DNR | EXC | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|------------------|------------------------------|
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 1010 | ug/kg | P1 E D | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 1100 | ug/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3180 | ug/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 1150 | ug/kg | D | | | ✓ |
| SIB-SC-I05-3-4-07/28/2022 | 22H0066-24RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW6020B | ARSENIC | 53.2 | mg/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW6020B | CADMIUM | 0.82 | mg/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW6020B | COPPER | 1300 | mg/kg | D | J | LDPR | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW6020B | LEAD | 471 | mg/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW6020B | ZINC | 1030 | mg/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW7471B | MERCURY | 0.109 | mg/kg | | J | MSL,MSH,MSP,LDPR | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 1350 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 2790 | ug/kg | E D | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 875 | ug/kg | P1 D | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 1190 | ug/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3340 | ug/kg | D | | | ✓ |
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 908 | ug/kg | D | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-I05-4-5-07/28/2022 | 22H0066-25RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW6020B | ARSENIC | 39.8 | mg/kg | D | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW6020B | COPPER | 543 | mg/kg | D | J | LDPR | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW6020B | LEAD | 102 | mg/kg | D | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW6020B | ZINC | 552 | mg/kg | D | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW7471B | MERCURY | 0.587 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1248 (AROCLOR 1248) | 292 | ug/kg | D | J | SSH | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 552 | ug/kg | D | J | SSH | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 161 | ug/kg | D | J | SSH | |
| SIB-SC-I05-5-6-07/28/2022 | 22H0066-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW6020B | ARSENIC | 6.22 | mg/kg | D | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW6020B | COPPER | 98.8 | mg/kg | D | J | LDPR | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW6020B | LEAD | 66.3 | mg/kg | D | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW6020B | ZINC | 269 | mg/kg | D | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW7471B | MERCURY | 0.227 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1248 (AROCLOR 1248) | 234 | ug/kg | D | J | SSH | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1254 (AROCLOR 1254) | 520 | ug/kg | D | J | SSH | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1260 (AROCLOR 1260) | 362 | ug/kg | D | J | IRL,SSHJ | |
| SIB-SC-D12-1-2-08/02/2022 | 22H0066-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW6020B | ARSENIC | 6.53 | mg/kg | D | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW6020B | CADMIUM | 0.64 | mg/kg | D | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW6020B | COPPER | 97.8 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW6020B | LEAD | 85.7 | mg/kg | D | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW6020B | ZINC | 322 | mg/kg | D | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW7471B | MERCURY | 0.406 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 250 | ug/kg | D | J | SSH | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 506 | ug/kg | D | J | SSH | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 405 | ug/kg | D | J | IRL,SSHJ | |
| SIB-SC-D12-2-3-08/02/2022 | 22H0066-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW6020B | ARSENIC | 5.68 | mg/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW6020B | COPPER | 74.2 | mg/kg | D | J | LDPR | |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW6020B | LEAD | 58.4 | mg/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW6020B | ZINC | 239 | mg/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW7471B | MERCURY | 0.307 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 91.1 | ug/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 216 | ug/kg | D | | | ✓ |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 158 | ug/kg | D | J | IRL | |
| SIB-SC-D12-3-4-08/02/2022 | 22H0066-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW6020B | ARSENIC | 2.95 | mg/kg | D | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW6020B | COPPER | 33.9 | mg/kg | D | J | LDPR | |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW6020B | LEAD | 7.54 | mg/kg | D | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW6020B | ZINC | 69.6 | mg/kg | D | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW7471B | MERCURY | 0.0563 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-------------------|------------------------------------|
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 24.5 | ug/kg | D | J | SSH | |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-4-5-08/02/2022 | 22H0066-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW6020B | ARSENIC | 3.08 | mg/kg | D | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW6020B | COPPER | 32.3 | mg/kg | D | J | LDPR | |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW6020B | LEAD | 5.35 | mg/kg | D | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW6020B | ZINC | 61.3 | mg/kg | D | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW7471B | MERCURY | 0.0355 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1248 (AROCLOR 1248) | 3.6 | ug/kg | J | J | CF | |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 10.1 | ug/kg | | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 6.1 | ug/kg | | | | ✓ |
| SIB-SC-D12-5-6-08/02/2022 | 22H0066-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW6020B | ARSENIC | 8.26 | mg/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW6020B | COPPER | 142 | mg/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW6020B | LEAD | 69.4 | mg/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW6020B | ZINC | 318 | mg/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW7471B | MERCURY | 0.346 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1248 (AROCLOR 1248) | 262 | ug/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1254 (AROCLOR 1254) | 600 | ug/kg | D | | | ✓ |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1260 (AROCLOR 1260) | 303 | ug/kg | D | J | IRL | |
| SIB-SC-D13-1-2-08/02/2022 | 22H0066-46 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| FD-23-08/02/2022 | 22H0066-47 | SW6020B | ARSENIC | 8.92 | mg/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW6020B | CADMIUM | 0.7 | mg/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW6020B | COPPER | 135 | mg/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW6020B | LEAD | 68.5 | mg/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW6020B | ZINC | 347 | mg/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW7471B | MERCURY | 0.33 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1248 (AROCLOR 1248) | 254 | ug/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1254 (AROCLOR 1254) | 572 | ug/kg | D | | | ✓ |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1260 (AROCLOR 1260) | 271 | ug/kg | D | J | IRL | |
| FD-23-08/02/2022 | 22H0066-47 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW6020B | ARSENIC | 5.66 | mg/kg | D | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW6020B | COPPER | 93.1 | mg/kg | D | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW6020B | LEAD | 68.3 | mg/kg | D | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW6020B | ZINC | 237 | mg/kg | D | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW7471B | MERCURY | 0.177 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL,MSLX | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1248 (AROCLOR 1248) | 302 | ug/kg | D | J | MSLX,SSH | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1254 (AROCLOR 1254) | 709 | ug/kg | D | J | MSLX,SSH | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1260 (AROCLOR 1260) | 391 | ug/kg | D | J | IRL,MSLX,SSH | |
| SIB-SC-D13-2-3-08/02/2022 | 22H0066-48 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL,MSLX | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW6020B | ARSENIC | 6.03 | mg/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW6020B | COPPER | 85.9 | mg/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW6020B | LEAD | 132 | mg/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW6020B | ZINC | 285 | mg/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW7471B | MERCURY | 0.386 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1248 (AROCLOR 1248) | 159 | ug/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1254 (AROCLOR 1254) | 331 | ug/kg | D | | | ✓ |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1260 (AROCLOR 1260) | 249 | ug/kg | D | J | IRL | |
| SIB-SC-D13-3-4-08/02/2022 | 22H0066-49 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW6020B | ARSENIC | 6.58 | mg/kg | D | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW6020B | COPPER | 93.4 | mg/kg | D | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW6020B | LEAD | 77.1 | mg/kg | D | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW6020B | ZINC | 295 | mg/kg | D | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW7471B | MERCURY | 0.586 | mg/kg | B | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | IRL | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1248 (AROCLOR 1248) | 141 | ug/kg | D | J | SSH | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1254 (AROCLOR 1254) | 343 | ug/kg | D | J | SSH | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1260 (AROCLOR 1260) | 238 | ug/kg | D | J | IRL,SSH | |
| SIB-SC-D13-4-5-08/02/2022 | 22H0066-50 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | IRL | |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 4 |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0066 |
| HGL Reviewer | Ken Rapuano 7/3/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The DV report did not note that EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were >> the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. While this is generally acceptable under the HGL consistency memorandum, qualification is required when the %R discrepancies were above the upper control limit by greater than 20%. The HGL reviewer applied J-SSH to all detected results for the following samples:

- SIB-SC-I08-1-2-07/28/2022 (5x dilution)
- FD-22-07/28/2022 (5x dilution)
- SIB-SC-I08-5-6-07/28/2022
- SIB-SC-P07-3-3.9-07/28/2022
- SIB-SC-I05-2-3-07/28/2022 (5x dilution)
- SIB-SC-D12-3-4-08/02/2022
- SIB-SC-D13-1-2-08/02/2022
- FD-23-08/02/2022
- SIB-SC-D13-3-4-08/02/2022

Standard Reference Material: The SRM associated with preparation batch BKH0168 had high %Rs for Aroclor 1260 (both columns). The DV report notes this but did not assign any qualification. All detected results reported from samples prepared in BKH0168 are Aroclors associated with Aroclor 1260 and should be qualified J-SRMH.

Laboratory Control Sample: The LCS for batch BKH0168 had high %Rs for Aroclor 1016 and Aroclor 1260; this was noted in the DV report but no qualification was applied due to the LCSD being in control. While the HGL consistency memorandum allows for this treatment of LCS discrepancies in limited circumstances, the exceedances are too great for the tolerances allowed for a clean matrix. All detected results reported from samples prepared in batch BKH0168 are Aroclors associated with Aroclor 1260 and should be qualified J-LCSH.

MS/MSD: The DV report noted the extremely low %Rs (<20%) for the MS and MSD performed on sample SIB-SC-D13-2-3-08/02/2022, but applied a UJ qualifier to associated non-detected results instead of an R qualifier. The sample concentration is 3.9x the spike concentration. Although the sample concentration is not >4x the spike concentration, the high sample concentration relative to the spike concentration could have an effect on the %Rs, and in the judgment of the HGL reviewer the qualifier of UJ is appropriate and no additional qualification is required.

Result Reporting: The 5x diluted result for SIB-SC-I05-4-5-07/28/2022 was associated with a confirmation RPD >40% and the validator selected the result from the 25x dilution of this sample as the usable result. Both results are within the calibrated range and the HGL reviewer concurs with this selection.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-I08-1-2-07/28/2022 (5x dilution) | Aroclor 1248 | 3290 | -- | J | J | SSH |
| | Aroclor 1260 | 2810 | -- | J | J | SSH |
| FD-22-07/28/2022 (5x dilution) | Aroclor 1248 | 3430 | -- | J | J | SSH |
| | Aroclor 1260 | 2970 | -- | J | J | SSH |
| SIB-SC-I08-5-6-07/28/2022 | Aroclor 1248 | 1500 | -- | J | J | SSH |
| | Aroclor 1254 | 2930 | -- | J | J | SSH |
| | Aroclor 1260 | 850 | -- | J | J | SSH |
| SIB-SC-P07-3-3.9- 07/28/2022 | Aroclor 1248 | 70.3 | -- | J | J | SSH |
| | Aroclor 1254 | 119 | -- | J | J | SSH |
| | Aroclor 1260 | 61 | J | J | J | IRL,SSH |
| SIB-SC-I05-2-3-07/28/2022 (5x dilution) | Aroclor 1248 | 644 | -- | J | J | SSH |
| | Aroclor 1260 | 475 | -- | J | J | SSH |
| SIB-SC-I05-3-4-07/28/2022 (25x diluted reanalysis) | Aroclor 1248 | 1100 | -- | J | J | SRMH,LCSH |
| | Aroclor 1254 | 3180 | -- | J | J | SRMH,LCSH |
| | Aroclor 1260 | 1150 | -- | J | J | SRMH,LCSH |
| SIB-SC-I05-4-5-07/28/2022 (25x diluted reanalysis) | Aroclor 1248 | 1190 | -- | J | J | SRMH,LCSH |
| | Aroclor 1254 | 3340 | -- | J | J | SRMH,LCSH |
| | Aroclor 1260 | 908 | -- | J | J | SRMH,LCSH |
| SIB-SC-I05-5-6-07/28/2022 | Aroclor 1248 | 292 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 552 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 161 | J | J | J | SSH,SRMH,LCSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-D12-1-2-08/02/2022 | Aroclor 1248 | 234 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 520 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 362 | J | J | J | IRL,SSHJ,SRMH,LCSH |
| SIB-SC-D12-2-3-08/02/2022 | Aroclor 1248 | 250 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 506 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 405 | J | J | J | IRL,SSH,SRMH,LCSH |
| SIB-SC-D12-3-4-08/02/2022 | Aroclor 1248 | 91.1 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 216 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 158 | J | J | J | IRL,SSH,SRMH,LCSH |
| SIB-SC-D12-4-5-08/02/2022 | Aroclor 1254 | 24.5 | J | J | J | SSH,SRMH,LCSH |
| SIB-SC-D12-5-6-08/02/2022 | Aroclor 1248 | 3.6 | J | J | J | CF,SRMH,LCSH |
| | Aroclor 1254 | 10.1 | -- | J | J | SRMH,LCSH |
| | Aroclor 1260 | 6.1 | -- | J | J | SRMH,LCSH |
| SIB-SC-D13-1-2-08/02/2022 | Aroclor 1248 | 262 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 600 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 303 | J | J | J | IRL,SSH,SRMH,LCSH |
| FD-23-08/02/2022 | Aroclor 1248 | 254 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 572 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 271 | J | J | J | IRL,SSH,SRMH,LCSH |
| SIB-SC-D13-2-3-08/02/2022 | Aroclor 1248 | 302 | J | J | J | MSLX,SSH,SRMH,LCSH |
| | Aroclor 1254 | 709 | J | J | J | MSLX,SSH,SRMH,LCSH |
| | Aroclor 1260 | 391 | J | J | J | IRL,MSLX,SSH,SRMH,LCSH |
| SIB-SC-D13-3-4-08/02/2022 | Aroclor 1248 | 159 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 331 | -- | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 249 | J | J | J | IRL,SSH,SRMH,LCSH |
| SIB-SC-D13-4-5-08/02/2022 | Aroclor 1248 | 141 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1254 | 343 | J | J | J | SSH,SRMH,LCSH |
| | Aroclor 1260 | 238 | J | J | J | IRL,SSH,SRMH,LCSH |

Metals – 6020B and 7471B

No additional issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0069

May 24, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22H0069 | SIB-SC-D13-5-6-08022022 | 22H0069-01 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D14-1-2-08022022 | 22H0069-11 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D14-2-3-08022022 | 22H0069-12 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D14-3-4-08022022 | 22H0069-13 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D14-4-5-08022022 | 22H0069-14 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D14-5-6-08022022 | 22H0069-15 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D15-1-2-08022022 | 22H0069-24 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D15-2-3-08022022 | 22H0069-25 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D15-3-4-08022022 | 22H0069-26 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D15-4-5-08022022 | 22H0069-27 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-D15-5-6-08022022 | 22H0069-28 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-E15-1-2-08022022 | 22H0069-37 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-E15-2-3-08022022 | 22H0069-38 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-E15-3-4-08022022 | 22H0069-39 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-E15-4-5-08022022 | 22H0069-40 | SE | ✓ | ✓ | ✓ |
| 22H0069 | SIB-SC-E15-5-6-08022022 | 22H0069-41 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0069 | 16 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| 1 | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. All results were free from contamination. No data were qualified.

Laboratory Control Samples (LCS/LCSD)

Laboratory control/laboratory control duplicate (LCS/LCSD) samples were analyzed at the appropriate frequency. No action is taken unless both the LCS and LCSD %R values are outside the control limits. Precision is evaluated using the relative percent difference (RPD) values calculated between the LCS and LCSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

For the LCSD, the %R value of AR1260 was greater than the upper control limit. No qualifiers were assigned based on the single outlier.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-D14-2-3-08/02/2022
- SIB-SC-D15-2-3-08/02/2022
- SIB-SC-D15-3-4-08/02/2022
- SIB-SC-E15-1-2-08/02/2022
- SIB-SC-D13-5-6-08/02/2022 MS

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MS recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0069 | 16 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Serial Dilutions |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Laboratory Duplicates | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. All data were free from contamination. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not evaluated.

Serial Dilutions

No serial dilutions were performed.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values. Precision was not evaluated.

No data were qualified for any reason. All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW6020B | ARSENIC | 5.02 | mg/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW6020B | COPPER | 62.4 | mg/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW6020B | LEAD | 43.4 | mg/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW6020B | ZINC | 180 | mg/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW7471B | MERCURY | 0.496 | mg/kg | B | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.3 | ug/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 145 | ug/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-D13-5-6-08/02/2022 | 22H0069-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW6020B | ARSENIC | 9.39 | mg/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW6020B | CADMIUM | 0.66 | mg/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW6020B | COPPER | 184 | mg/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW6020B | LEAD | 65.1 | mg/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW6020B | ZINC | 423 | mg/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW7471B | MERCURY | 0.292 | mg/kg | B | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 64.5 | ug/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 162 | ug/kg | D | | | ✓ |
| SIB-SC-D14-1-2-08/02/2022 | 22H0069-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW6020B | ARSENIC | 7.68 | mg/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW6020B | COPPER | 119 | mg/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW6020B | LEAD | 73.1 | mg/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW6020B | ZINC | 297 | mg/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW7471B | MERCURY | 0.269 | mg/kg | B | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 98.4 | ug/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 308 | ug/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 185 | ug/kg | D | | | ✓ |
| SIB-SC-D14-2-3-08/02/2022 | 22H0069-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW6020B | ARSENIC | 6.3 | mg/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW6020B | COPPER | 82.2 | mg/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW6020B | LEAD | 58.4 | mg/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW6020B | ZINC | 265 | mg/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW7471B | MERCURY | 0.323 | mg/kg | B | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 74.1 | ug/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 168 | ug/kg | D | | | ✓ |
| SIB-SC-D14-3-4-08/02/2022 | 22H0069-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW6020B | ARSENIC | 6.54 | mg/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW6020B | COPPER | 101 | mg/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW6020B | LEAD | 77.8 | mg/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW6020B | ZINC | 321 | mg/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW7471B | MERCURY | 0.535 | mg/kg | B | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 257 | ug/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 201 | ug/kg | D | | | ✓ |
| SIB-SC-D14-4-5-08/02/2022 | 22H0069-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW6020B | ARSENIC | 6 | mg/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW6020B | COPPER | 78.7 | mg/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW6020B | LEAD | 65.6 | mg/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW6020B | ZINC | 247 | mg/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW7471B | MERCURY | 0.411 | mg/kg | B | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 73.8 | ug/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 217 | ug/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 170 | ug/kg | D | | | ✓ |
| SIB-SC-D14-5-6-08/02/2022 | 22H0069-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW6020B | ARSENIC | 8.13 | mg/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW6020B | CADMIUM | 0.6 | mg/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW6020B | COPPER | 119 | mg/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW6020B | LEAD | 43.8 | mg/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW6020B | ZINC | 305 | mg/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW7471B | MERCURY | 0.199 | mg/kg | B | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 52.6 | ug/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 142 | ug/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 157 | ug/kg | D | | | ✓ |
| SIB-SC-D15-1-2-08/02/2022 | 22H0069-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW6020B | ARSENIC | 9.84 | mg/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW6020B | CADMIUM | 0.66 | mg/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW6020B | COPPER | 152 | mg/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW6020B | LEAD | 78 | mg/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW6020B | ZINC | 370 | mg/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW7471B | MERCURY | 0.312 | mg/kg | B | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 275 | ug/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 145 | ug/kg | D | | | ✓ |
| SIB-SC-D15-2-3-08/02/2022 | 22H0069-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW6020B | ARSENIC | 6.7 | mg/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW6020B | COPPER | 106 | mg/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW6020B | LEAD | 71.4 | mg/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW6020B | ZINC | 283 | mg/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW7471B | MERCURY | 0.282 | mg/kg | B | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1248 (AROCLOR 1248) | 201 | ug/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 440 | ug/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 260 | ug/kg | D | | | ✓ |
| SIB-SC-D15-3-4-08/02/2022 | 22H0069-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW6020B | ARSENIC | 6.4 | mg/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW6020B | COPPER | 70.7 | mg/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW6020B | LEAD | 55.5 | mg/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW6020B | ZINC | 265 | mg/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW7471B | MERCURY | 0.223 | mg/kg | | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 61.3 | ug/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-D15-4-5-08/02/2022 | 22H0069-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW6020B | ARSENIC | 7.34 | mg/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW6020B | CADMIUM | 0.81 | mg/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW6020B | COPPER | 111 | mg/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW6020B | LEAD | 115 | mg/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW6020B | ZINC | 405 | mg/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW7471B | MERCURY | 0.451 | mg/kg | | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 169 | ug/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 368 | ug/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 286 | ug/kg | D | | | ✓ |
| SIB-SC-D15-5-6-08/02/2022 | 22H0069-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW6020B | ARSENIC | 8.62 | mg/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW6020B | COPPER | 135 | mg/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW6020B | LEAD | 72.6 | mg/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW6020B | ZINC | 339 | mg/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW7471B | MERCURY | 0.0898 | mg/kg | | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 313 | ug/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 693 | ug/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 282 | ug/kg | D | | | ✓ |
| SIB-SC-E15-1-2-08/02/2022 | 22H0069-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW6020B | ARSENIC | 6.77 | mg/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW6020B | COPPER | 96.9 | mg/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW6020B | LEAD | 64.4 | mg/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW6020B | ZINC | 280 | mg/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW7471B | MERCURY | 0.375 | mg/kg | | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1248 (AROCLOR 1248) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 234 | ug/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1260 (AROCLOR 1260) | 173 | ug/kg | D | | | ✓ |
| SIB-SC-E15-2-3-08/02/2022 | 22H0069-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW6020B | ARSENIC | 5.99 | mg/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW6020B | COPPER | 56.9 | mg/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW6020B | LEAD | 38.8 | mg/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW6020B | ZINC | 257 | mg/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW7471B | MERCURY | 0.154 | mg/kg | | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.6 | ug/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 79.1 | ug/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 88.6 | ug/kg | D | | | ✓ |
| SIB-SC-E15-3-4-08/02/2022 | 22H0069-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW6020B | ARSENIC | 5.62 | mg/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW6020B | COPPER | 94.6 | mg/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW6020B | LEAD | 80.1 | mg/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW6020B | ZINC | 323 | mg/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW7471B | MERCURY | 0.45 | mg/kg | | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1248 (AROCLOR 1248) | 178 | ug/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1254 (AROCLOR 1254) | 397 | ug/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1260 (AROCLOR 1260) | 232 | ug/kg | D | | | ✓ |
| SIB-SC-E15-4-5-08/02/2022 | 22H0069-40 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW6020B | ARSENIC | 6.64 | mg/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW6020B | COPPER | 101 | mg/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW6020B | LEAD | 105 | mg/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW6020B | ZINC | 308 | mg/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW7471B | MERCURY | 0.339 | mg/kg | | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1248 (AROCLOR 1248) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1254 (AROCLOR 1254) | 270 | ug/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1260 (AROCLOR 1260) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-E15-5-6-08/02/2022 | 22H0069-41 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0069 |
| HGL Reviewer | Ken Rapuano 7/4/2023 |
| HGL Senior Review | Justin Hersh 7/12/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were >> the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. While this is generally acceptable under the HGL consistency memorandum, qualification is required when the %R discrepancies were above the upper control limit by greater than 20%. The HGL reviewer applied J-SSH to all detected results for sample SIB-SC-E15-1-2-08/02/2022.

Laboratory Control Samples: The LCSD for batch BKH0256 had a high %R for Aroclor 1260; this was noted in the DV report but no qualification was applied due to the LCS being in control. While the HGL consistency memorandum allows for this treatment of LCS discrepancies in limited circumstances, the exceedance is too great for the tolerances allowed for a clean matrix and the mean of the LCS and LCSD is > the upper control limit. All detected results reported from samples prepared in batch BKH0256 are Aroclors associated with Aroclor 1260 and should be qualified J-LCSH.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|----------------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E15-1-2-08/02/2022 | All detected results | varies | -- | J | J | LCSH,SSH |
| All other samples | All detected results | varies | -- | J | J | LCSH |

Metals – 6020B and 7471B

Method Blanks: The DV report did not note that the method blank associated with preparation batch BKH0478 was contaminated with 0.0059 mg/kg mercury. All associated mercury results are > the qualification threshold and no additional qualification is required.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0242

May 24, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0242 | SIB-SC-E13-1-2-08032022 | 22H0242-02 | SE | ✓ | ✓ | ✓ |
| 22H0242 | FD-24-08/03/2022 | 22H0242-03 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC E13-2-3-08/03/2022 | 22H0242-04 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E13-3-4-08032022 | 22H0242-05 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E13-4-5-08032022 | 22H0242-06 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E13-5-6-08032022 | 22H0242-07 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E14-1-2-08032022 | 22H0242-16 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E14-2-3-08032022 | 22H0242-17 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E14-3-4-08032022 | 22H0242-18 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E14-4-5-08032022 | 22H0242-19 | SE | ✓ | ✓ | ✓ |
| 22H0242 | SIB-SC-E14-5-6-08032022 | 22H0242-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0242 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. All results were free from contamination. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD %R values are outside the control limits for MS/MSD percent recovery (%R) values. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. Qualifiers were only issued to the parent sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

When the MS/MSD %R values indicate a potential low bias, associated results are estimated (J/UJ). Only the associated positive results are estimated (J) if the %R values indicate a potential high bias. In cases where one outlier is less than the lower control limit and one outlier is greater than the upper control limit, no bias is indicated. If the RPD values indicate uncertainty, associated positive results are estimated (J).

Sample SIB-SC-E13-3-4-08/03/2022 was used for the MS/MSD analyses. The %R values of AR1260 for the MS/MSD were less than the lower control limit. Results in the parent sample were estimated (J/UJ-MSLX).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-E13-3-4-08/03/2022
- SIB-SC-E14-1-2-08/03/2022
- SIB-SC-E14-3-4-08/03/2022

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-E13-1-2-08/03/2022 & FD-24-08/03/2022, were submitted. Field precision was acceptable.

Reporting Limits

All samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0242 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples/Standard Reference Materials (SRM) | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. All data were free from contamination. No data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH). For %R values less than 30%, indicating an extreme low bias, then associated results were estimated (J/UJ-MSLX).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKJ0011, MS/MSD samples were analyzed using Sample SIB-SC-E13-3-4-08032022. The mercury recovery in the MS sample was greater than the upper control limit and the recovery was very low in the associated MSD sample; associated sample results were estimated (J-MSH,MSLX). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

For Batch BKI0382, MS/MSD samples were analyzed using Sample SIB-SC-E13-3-4-08032022. The lead recovery in the MSD sample was greater than the upper control limit, but was in control in the associated MS sample; associated detected results were estimated (J-MSH).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKJ0011, Sample SIB-SC-E13-3-4-08032022 was used for the lab duplicate. The RPD value for mercury was greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC E13-2-3-08/03/2022 & FD-24-08/03/2022 were submitted as field duplicates. The difference value for mercury was greater than the control limit; the associated parent and field duplicate sample results were estimated (J-FDPA).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as a laboratory duplicate and field duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------------|------------------------------|
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW6020B | ARSENIC | 7.44 | mg/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW6020B | COPPER | 101 | mg/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW6020B | LEAD | 76.3 | mg/kg | D | J | MSH | |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW6020B | ZINC | 327 | mg/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW7471B | MERCURY | 0.338 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 75.6 | ug/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 217 | ug/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 165 | ug/kg | D | | | ✓ |
| SIB-SC-E13-1-2-08/03/2022 | 22H0242-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW6020B | ARSENIC | 7.22 | mg/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW6020B | CADMIUM | 0.73 | mg/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW6020B | COPPER | 109 | mg/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW6020B | LEAD | 107 | mg/kg | D | J | MSH | |
| FD-24-08/03/2022 | 22H0242-03 | SW6020B | ZINC | 367 | mg/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW7471B | MERCURY | 0.349 | mg/kg | | J | MSH,MSLX,MSP,LDPR,FDPA | |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 109 | ug/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 325 | ug/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 262 | ug/kg | D | | | ✓ |
| FD-24-08/03/2022 | 22H0242-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW6020B | ARSENIC | 7.02 | mg/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW6020B | COPPER | 103 | mg/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW6020B | LEAD | 82.5 | mg/kg | D | J | MSH | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|------------------------|------------------------------|
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW6020B | ZINC | 354 | mg/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW7471B | MERCURY | 0.104 | mg/kg | | J | MSH,MSLX,MSP,LDPR,FDPA | |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 120 | ug/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 336 | ug/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 272 | ug/kg | D | | | ✓ |
| SIB-SC-E13-2-3-08/03/2022 | 22H0242-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW6020B | ARSENIC | 6.9 | mg/kg | D | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW6020B | COPPER | 74 | mg/kg | D | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW6020B | LEAD | 65.7 | mg/kg | D | J | MSH | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW6020B | ZINC | 248 | mg/kg | D | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW7471B | MERCURY | 0.398 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | UJ | MSLX | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 135 | ug/kg | D | J | MSLX | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 466 | ug/kg | D | J | MSLX | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 238 | ug/kg | D | J | MSLX | |
| SIB-SC-E13-3-4-08/03/2022 | 22H0242-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | UJ | MSLX | |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW6020B | ARSENIC | 5.51 | mg/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW6020B | CADMIUM | 0.25 | mg/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW6020B | COPPER | 48.6 | mg/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW6020B | LEAD | 27 | mg/kg | D | J | MSH | |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW6020B | ZINC | 130 | mg/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW7471B | MERCURY | 0.143 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 23.7 | ug/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 75.1 | ug/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 48.2 | ug/kg | D | | | ✓ |
| SIB-SC-E13-4-5-08/03/2022 | 22H0242-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW6020B | ARSENIC | 4.27 | mg/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW6020B | CADMIUM | 0.14 | mg/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW6020B | COPPER | 39.5 | mg/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW6020B | LEAD | 16 | mg/kg | D | J | MSH | |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW6020B | ZINC | 92.4 | mg/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW7471B | MERCURY | 0.0962 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 32 | ug/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 25 | ug/kg | D | | | ✓ |
| SIB-SC-E13-5-6-08/03/2022 | 22H0242-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW6020B | ARSENIC | 8.02 | mg/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW6020B | CADMIUM | 0.67 | mg/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW6020B | COPPER | 109 | mg/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW6020B | LEAD | 70.1 | mg/kg | D | J | MSH | |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW6020B | ZINC | 330 | mg/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW7471B | MERCURY | 0.276 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 154 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 469 | ug/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 194 | ug/kg | D | | | ✓ |
| SIB-SC-E14-1-2-08/03/2022 | 22H0242-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW6020B | ARSENIC | 6.66 | mg/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW6020B | COPPER | 97.8 | mg/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW6020B | LEAD | 87.7 | mg/kg | D | J | MSH | |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW6020B | ZINC | 304 | mg/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW7471B | MERCURY | 0.335 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 88.7 | ug/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 263 | ug/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 169 | ug/kg | D | | | ✓ |
| SIB-SC-E14-2-3-08/03/2022 | 22H0242-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW6020B | ARSENIC | 6.85 | mg/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW6020B | CADMIUM | 0.63 | mg/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW6020B | COPPER | 118 | mg/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW6020B | LEAD | 127 | mg/kg | D | J | MSH | |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW6020B | ZINC | 343 | mg/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW7471B | MERCURY | 0.625 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 156 | ug/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 440 | ug/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 307 | ug/kg | D | | | ✓ |
| SIB-SC-E14-3-4-08/03/2022 | 22H0242-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW6020B | ARSENIC | 4.84 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-------------------|------------------------------|
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW6020B | CADMIUM | 0.29 | mg/kg | D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW6020B | COPPER | 46.5 | mg/kg | D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW6020B | LEAD | 32.4 | mg/kg | D | J | MSH | |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW7471B | MERCURY | 0.226 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 65.1 | ug/kg | P1 D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 168 | ug/kg | D | | | ✓ |
| SIB-SC-E14-4-5-08/03/2022 | 22H0242-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW6020B | ARSENIC | 4.44 | mg/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW6020B | CADMIUM | 0.18 | mg/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW6020B | COPPER | 41.2 | mg/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW6020B | LEAD | 16.9 | mg/kg | D | J | MSH | |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW6020B | ZINC | 99 | mg/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW7471B | MERCURY | 0.0823 | mg/kg | | J | MSH,MSLX,MSP,LDPR | |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.3 | ug/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 90.3 | ug/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 49.6 | ug/kg | D | | | ✓ |
| SIB-SC-E14-5-6-08/03/2022 | 22H0242-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0242 |
| HGL Reviewer | Ken Rapuano 7/4/2023 |
| HGL Senior Review | Justin Hersh 7/13/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were >> the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; the HGL reviewer confirmed that all %Rs discrepancies were <20% above the upper control limit and no additional qualification is required.

MS/MSD: The DV report noted the extremely low %Rs (<20%) for the MS and MSD performed on sample SIB-SC-D13-2-3-08/02/2022, but applied a UJ qualifier to associated non-detected results instead of an R qualifier. The sample concentration is only ~2.4x the spike concentration and in the judgment of the HGL reviewer an R qualifier is appropriate.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E13-3-4-08/03/2022 | Aroclor 1262 | 2.9 | UJ | R | R | MSLX |
| | Aroclor 1268 | 2.9 | UJ | R | R | MSLX |

Metals – 6020B and 7471B

No additional issues noted.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|---|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0243 |
| Laboratory: ARI | Date: 7/31/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.8.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-D10-1-2-08/03/2022 | 22H0243-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-2-3-08/03/2022 | 22H0243-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-3-4-08/03/2022 | 22H0243-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-4-5-08/03/2022 | 22H0243-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-5-6-08/03/2022 | 22H0243-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-1-2-08/03/2022 | 22H0243-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-2-3-08/03/2022 | 22H0243-19 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-3-4-08/03/2022 | 22H0243-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-4-5-08/03/2022 | 22H0243-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-5-6-08/03/2022 | 22H0243-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-6-7-08/03/2022 | 22H0243-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-7-8-08/03/2022 | 22H0243-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-8-9-08/03/2022 | 22H0243-25 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-9-10-08/03/2022 | 22H0243-26 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-10-11-08/03/2022 | 22H0243-27 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-11-12-08/03/2022 | 22H0243-28 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-12-13-08/03/2022 | 22H0243-29 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-13-14-08/03/2022 | 22H0243-30 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E18-14-15-08/03/2022 | 22H0243-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C13-1-2-08/03/2022 | 22H0243-38 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C13-2-3-08/03/2022 | 22H0243-39 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C13-3-4-08/03/2022 | 22H0243-40 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The internal standard areas were within limits except for HBBP internal standard which is out of control limits on one column for samples 22H0243-39 and 22H0243-40. The second column is in control. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB06-08042022 (results reported in SDG 22H0215) is associated with all sample results reported in this SDG. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required. The rinse blank was also contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Samples SIB-SC-D10-1-2-08/03/2022, SIB-SC-D10-2-3-08/03/2022 and SIB-SC-C13-3-4-08/03/2022 had a high %R for surrogate Decachlorobiphenyl; all exceedances were by less than 20% and the other three surrogate %Rs were in control. In accordance with the HGL consistency memorandum, no qualification is required. Sample SIB-SC-C13-2-3-08/03/2022 had a high %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]. The detected Aroclor results for sample SIB-SC-C13-2-3-08/03/2022 should be qualified J with reason code SSH; non-detections should not be qualified.

Qualification: The detected Aroclor results for sample SIB-SC-D10-2-3-08/03/2022 are qualified J with reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-E18-14-15-08/03/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on sample SIB-SC-D10-1-2-08/03/2022 (Method 7471B) and had a high %R in the MSD for Mercury for batch BKJ0359. All samples in that batch should have mercury detections qualified J-MSH; non-detections do not require qualification.

Qualification: The detected mercury results for samples SIB-SC-C13-1-2-08/03/2022, SIB-SC-D10-1-2-08/03/2022, SIB-SC-D10-2-3-08/03/2022, SIB-SC-D10-3-4-08/03/2022, SIB-SC-D10-4-5-08/03/2022, SIB-SC-D10-5-6-08/03/2022, SIB-SC-E18-10-11-08/03/2022, SIB-SC-E18-11-12-08/03/2022, SIB-SC-E18-1-2-08/03/2022, SIB-SC-E18-12-13-08/03/2022, SIB-SC-E18-13-14-08/03/2022, SIB-SC-E18-14-15-08/03/2022, SIB-SC-E18-2-3-08/03/2022, SIB-SC-E18-3-4-08/03/2022, SIB-SC-E18-4-5-08/03/2022, SIB-SC-E18-5-6-08/03/2022, SIB-SC-E18-6-7-08/03/2022, SIB-SC-E18-7-8-08/03/2022, SIB-SC-E18-8-9-08/03/2022 and SIB-SC-E18-9-10-08/03/2022 are qualified J-MSH.

An MS/MSD was performed on samples SIB-SC-D10-2-3-08/03/2022 and SIB-SC-C13-3-4-08/03/2022 (Methods 6020B and 6020B UCT-KED). Sample SIB-SC-D10-2-3-08/03/2022 (Method 6020B) had a low

return for %R in the MS for Lead for batch BK10538. All lead results reported from this batch are detections and should be qualified J.

Qualification: The detected lead results for samples SIB-SC-C13-1-2-08/03/2022, SIB-SC-C13-2-3-08/03/2022, SIB-SC-D10-2-3-08/03/2022, SIB-SC-D10-3-4-08/03/2022, SIB-SC-D10-4-5-08/03/2022, SIB-SC-D10-5-6-08/03/2022, SIB-SC-E18-10-11-08/03/2022, SIB-SC-E18-11-12-08/03/2022, SIB-SC-E18-1-2-08/03/2022, SIB-SC-E18-12-13-08/03/2022, SIB-SC-E18-13-14-08/03/2022, SIB-SC-E18-14-15-08/03/2022, SIB-SC-E18-2-3-08/03/2022, SIB-SC-E18-3-4-08/03/2022, SIB-SC-E18-4-5-08/03/2022, SIB-SC-E18-5-6-08/03/2022, SIB-SC-E18-6-7-08/03/2022, SIB-SC-E18-7-8-08/03/2022, SIB-SC-E18-8-9-08/03/2022 and SIB-SC-E18-9-10-08/03/2022 are qualified J-MSL.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-SC-D10-1-2-08/03/2022 (Method 7471B) as well as SIB-SC-D10-2-3-08/03/2022 and SIB-SC-C13-3-4-08/03/2022 (Methods 6020B and 6020B UCT-KED). The RPDs of the duplicate pairs met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|----------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-D10-1-2-08/03/2022 | Mercury | 0.361 | - | 0.361 | J | MSH |
| SIB-SC-D10-2-3-08/03/2022 | Mercury | 0.525 | - | 0.525 | J | MSH |
| | Lead | 93.3 | D | 93.3 | J | MSL |
| SIB-SC-D10-3-4-08/03/2022 | Mercury | 0.194 | - | 0.194 | J | MSH |
| | Lead | 22.3 | D | 22.3 | J | MSL |
| SIB-SC-D10-4-5-08/03/2022 | Mercury | 0.0625 | - | 0.0625 | J | MSH |
| | Lead | 49.4 | D | 49.4 | J | MSL |
| SIB-SC-D10-5-6-08/03/2022 | Mercury | 0.314 | - | 0.314 | J | MSH |
| | Lead | 27.6 | D | 27.6 | J | MSL |
| SIB-SC-E18-1-2-08/03/2022 | Mercury | 0.3 | - | 0.3 | J | MSH |
| | Lead | 36.5 | D | 36.5 | J | MSL |
| SIB-SC-E18-2-3-08/03/2022 | Mercury | 0.247 | - | 0.247 | J | MSH |
| | Lead | 43.0 | D | 43.0 | J | MSL |
| SIB-SC-E18-3-4-08/03/2022 | Mercury | 0.326 | - | 0.326 | J | MSH |
| | Lead | 65.3 | D | 65.3 | J | MSL |
| SIB-SC-E18-4-5-08/03/2022 | Mercury | 0.273 | - | 0.273 | J | MSH |
| | Lead | 45.9 | D | 45.9 | J | MSL |
| SIB-SC-E18-5-6-08/03/2022 | Mercury | 0.279 | - | 0.279 | J | MSH |
| | Lead | 32.0 | D | 32.0 | J | MSL |
| SIB-SC-E18-6-7-08/03/2022 | Mercury | 0.318 | - | 0.318 | J | MSH |
| | Lead | 49 | D | 49 | J | MSL |
| SIB-SC-E18-7-8-08/03/2022 | Mercury | 0.0944 | - | 0.0944 | J | MSH |
| | Lead | 40.3 | D | 40.3 | J | MSL |
| SIB-SC-E18-8-9-08/03/2022 | Mercury | 0.159 | - | 0.159 | J | MSH |
| | Lead | 28.6 | D | 28.6 | J | MSL |
| SIB-SC-E18-9-10-08/03/2022 | Mercury | 0.135 | - | 0.135 | J | MSH |
| | Lead | 16.1 | D | 16.1 | J | MSL |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|---------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-E18-10-11-08/03/2022 | Mercury | 0.0881 | - | 0.0881 | J | MSH |
| | Lead | 10.8 | D | 10.8 | J | MSL |
| SIB-SC-E18-11-12-08/03/2022 | Mercury | 0.0654 | - | 0.0654 | J | MSH |
| | Lead | 8.65 | D | 8.65 | J | MSL |
| SIB-SC-E18-12-13-08/03/2022 | Mercury | 0.0365 | - | 0.0365 | J | MSH |
| | Lead | 5.09 | D | 5.09 | J | MSL |
| SIB-SC-E18-13-14-08/03/2022 | Mercury | 0.0332 | - | 0.0332 | J | MSH |
| | Lead | 4.00 | D | 4.00 | J | MSL |
| SIB-SC-E18-14-15-08/03/2022 | Mercury | 0.0236 | J | 0.0236 | J | MSH |
| | Lead | 3.23 | D | 3.23 | J | MSL |
| SIB-SC-C13-1-2-08/03/2022 | Mercury | 0.858 | - | 0.858 | J | MSH |
| | Lead | 96.8 | D | 96.8 | J | MSL |
| SIB-SC-C13-2-3-08/03/2022 | Aroclor 1248 | 62.0 | D | 62.0 | J | SSH |
| | Aroclor 1254 | 211 | D | 211 | J | SSH |
| | Aroclor 1260 | 182 | D | 182 | J | SSH |
| | Lead | 80.8 | D | 80.8 | J | MSL |
| SIB-SC-C13-3-4-08/03/2022 | No qualification required | | | | | |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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Prepared by:

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EcoChem Project: C28601-1

SDG: 22H0246

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definition and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0246 | SIB-SC-C13-4-5-08032022 | 22H0246-01 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C13-5-6-08032022 | 22H0246-02 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C14-1-2-08042022 | 22H0246-12 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C14-2-3-08042022 | 22H0246-13 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C14-3-4-08042022 | 22H0246-14 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C14-4-5-08042022 | 22H0246-15 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-C14-5-6-08042022 | 22H0246-16 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SE | ✓ | ✓ | ✓ |
| 22H0246 | FD-25-08/04/2022 | 22H0246-24 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D07-2-3-08042022 | 22H0246-25 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D07-3-4-08042022 | 22H0246-26 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D07-4-5-08042022 | 22H0246-27 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D07-5-6-08042022 | 22H0246-28 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D08-1-2-08042022 | 22H0246-36 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D08-2-3-08042022 | 22H0246-37 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D08-3-4-08042022 | 22H0246-38 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D08-4-5-08042022 | 22H0246-39 | SE | ✓ | ✓ | ✓ |
| 22H0246 | SIB-SC-D08-5-6-08042022 | 22H0246-40 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0246 | 18 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

Sample SIB-SC-D07-2-3-08/04/2022 was analyzed as the batch MS/MSD. The percent recovery (%R) value for AR1260 was greater than the upper control limit in the MSD but within the control limit in the MS. No qualifiers were assigned for the single outlier.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. The %R values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Sample SIB-SC-C14-2-3-08/04/2022, the %R values for DCBP were greater than the upper control limit on both columns. Positive results in this sample were estimated (J-SSH).

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-C14-1-2-08/04/2022
- SIB-SC-C14-3-4-08/04/2022
- SIB-SC-C14-4-5-08/04/2022
- SIB-SC-D07-1-2-08/04/2022
- FD-25-08/04/2022
- SIB-SC-D07-2-3-08/04/2022 MSD. No qualifiers were assigned for QC surrogate outliers.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-D07-1-2-08/04/2022 & FD-25-08/04/2022, were submitted. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

Data were qualified based on surrogate accuracy outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0246 | 18 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For Batch BKJ0360, MS/MSD samples were analyzed using Sample SIB-SC-D07-2-3-08/04/2022. The mercury recoveries in the MS/MSD samples were very low; associated sample results were estimated (J-MSLX). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

For Batch BKJ0512, MS/MSD samples were analyzed using Sample SIB-SC-D07-2-3-08/04/2022. The lead recoveries in the MS/MSD samples were very low and were in control in the post spike. All associated lead results were estimated (J-MSLX).

For Batch BKJ0512, MS/MSD samples were analyzed using Sample SIB-SC-D07-2-3-08/04/2022. The copper recoveries in the MS/MSD samples were less than the lower control limit. All associated copper results were estimated (J-MSL).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference is 20% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For Batch BKJ0512, Sample SIB-SC-D07-2-3-08/04/2022 was used for the lab duplicate. The RPD values for lead and arsenic were greater than the control limit; results in this batch were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50% for sediments. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Samples SIB-SC-D07-1-2-08/04/2022 & FD-25-08/04/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers as well as a laboratory duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW6020B | ARSENIC | 5.09 | mg/kg | D | J | LDPR | |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW6020B | CADMIUM | 0.14 | mg/kg | D J | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW6020B | COPPER | 27.1 | mg/kg | D | J | MSL | |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW6020B | LEAD | 6.72 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW6020B | ZINC | 61.8 | mg/kg | D | J | SDIL | |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW7471B | MERCURY | 0.166 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 36.7 | ug/kg | D | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 35.8 | ug/kg | D | | | ✓ |
| SIB-SC-C13-4-5-08032022 | 22H0246-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW6020B | ARSENIC | 3.94 | mg/kg | D | J | LDPR | |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW6020B | CADMIUM | 0.14 | mg/kg | D | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW6020B | COPPER | 43 | mg/kg | D | J | MSL | |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW6020B | LEAD | 11.4 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW6020B | ZINC | 79.3 | mg/kg | D | J | SDIL | |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW7471B | MERCURY | 0.139 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 31.7 | ug/kg | D | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 37.6 | ug/kg | D | | | ✓ |
| SIB-SC-C13-5-6-08032022 | 22H0246-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW6020B | ARSENIC | 8.05 | mg/kg | D | J | LDPR | |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW6020B | CADMIUM | 0.73 | mg/kg | D | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW6020B | COPPER | 123 | mg/kg | D | J | MSL | |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW6020B | LEAD | 138 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW6020B | ZINC | 430 | mg/kg | D | J | SDIL | |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW7471B | MERCURY | 0.5 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 160 | ug/kg | D | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 460 | ug/kg | D | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 322 | ug/kg | D | | | ✓ |
| SIB-SC-C14-1-2-08042022 | 22H0246-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW6020B | ARSENIC | 5.98 | mg/kg | D | J | LDPR | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW6020B | CADMIUM | 0.73 | mg/kg | D | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW6020B | COPPER | 77.6 | mg/kg | D | J | MSL | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW6020B | LEAD | 91.3 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW6020B | ZINC | 271 | mg/kg | D | J | SDIL | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW7471B | MERCURY | 0.182 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.6 | ug/kg | D | J | SSH | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 273 | ug/kg | D | J | SSH | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 293 | ug/kg | D | J | SSH | |
| SIB-SC-C14-2-3-08042022 | 22H0246-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW6020B | ARSENIC | 4.87 | mg/kg | D | J | LDPR | |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW6020B | COPPER | 47.3 | mg/kg | D | J | MSL | |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW6020B | LEAD | 57.5 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW6020B | ZINC | 169 | mg/kg | D | J | SDIL | |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW7471B | MERCURY | 0.435 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 54.7 | ug/kg | D | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 78.1 | ug/kg | D | | | ✓ |
| SIB-SC-C14-3-4-08042022 | 22H0246-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW6020B | ARSENIC | 4.76 | mg/kg | D | J | LDPR | |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW6020B | COPPER | 52.1 | mg/kg | D | J | MSL | |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW6020B | LEAD | 50.6 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW6020B | ZINC | 166 | mg/kg | D | J | SDIL | |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW7471B | MERCURY | 0.539 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.4 | ug/kg | D | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 93.3 | ug/kg | D | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-C14-4-5-08042022 | 22H0246-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW6020B | ARSENIC | 3.19 | mg/kg | D | J | LDPR | |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW6020B | CADMIUM | 0.15 | mg/kg | D | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW6020B | COPPER | 25.2 | mg/kg | D | J | MSL | |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW6020B | LEAD | 19.7 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW6020B | ZINC | 81.5 | mg/kg | D | J | SDIL | |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW7471B | MERCURY | 0.163 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 28 | ug/kg | D | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 38.3 | ug/kg | D | | | ✓ |
| SIB-SC-C14-5-6-08042022 | 22H0246-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW6020B | ARSENIC | 5.66 | mg/kg | D | J | LDPR | |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW6020B | COPPER | 107 | mg/kg | D | J | MSL | |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW6020B | LEAD | 142 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW6020B | ZINC | 373 | mg/kg | D | J | SDIL | |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW7471B | MERCURY | 0.382 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 341 | ug/kg | D | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 239 | ug/kg | D | | | ✓ |
| SIB-SC-D07-1-2-08/04/2022 | 22H0246-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| FD-25-08/04/2022 | 22H0246-24 | SW6020B | ARSENIC | 6.11 | mg/kg | D | J | LDPR | |
| FD-25-08/04/2022 | 22H0246-24 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW6020B | COPPER | 105 | mg/kg | D | J | MSL | |
| FD-25-08/04/2022 | 22H0246-24 | SW6020B | LEAD | 86 | mg/kg | D | J | MSLX,LDPR | |
| FD-25-08/04/2022 | 22H0246-24 | SW6020B | ZINC | 366 | mg/kg | D | J | SDIL | |
| FD-25-08/04/2022 | 22H0246-24 | SW7471B | MERCURY | 0.442 | mg/kg | | J | MSLX,MSP | |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 97.5 | ug/kg | D | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 246 | ug/kg | D | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 177 | ug/kg | D | | | ✓ |
| FD-25-08/04/2022 | 22H0246-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW6020B | ARSENIC | 6.57 | mg/kg | D | J | LDPR | |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW6020B | COPPER | 79.1 | mg/kg | D | J | MSL | |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW6020B | LEAD | 90.5 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW6020B | ZINC | 225 | mg/kg | D | J | SDIL | |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW7471B | MERCURY | 0.39 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.6 | ug/kg | D | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 95.2 | ug/kg | D | | | ✓ |
| SIB-SC-D07-2-3-08042022 | 22H0246-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW6020B | ARSENIC | 3.88 | mg/kg | D | J | LDPR | |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW6020B | CADMIUM | 0.25 | mg/kg | D | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW6020B | COPPER | 36.6 | mg/kg | D | J | MSL | |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW6020B | LEAD | 19 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW6020B | ZINC | 108 | mg/kg | D | J | SDIL | |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW7471B | MERCURY | 0.201 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 60.1 | ug/kg | D | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 56.4 | ug/kg | D | | | ✓ |
| SIB-SC-D07-3-4-08042022 | 22H0246-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW6020B | ARSENIC | 5.53 | mg/kg | D | J | LDPR | |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW6020B | COPPER | 47.7 | mg/kg | D | J | MSL | |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW6020B | LEAD | 35.5 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW6020B | ZINC | 149 | mg/kg | D | J | SDIL | |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW7471B | MERCURY | 0.365 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 39.4 | ug/kg | D | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 65.3 | ug/kg | D | | | ✓ |
| SIB-SC-D07-4-5-08042022 | 22H0246-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW6020B | ARSENIC | 3.78 | mg/kg | D | J | LDPR | |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW6020B | COPPER | 31.6 | mg/kg | D | J | MSL | |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW6020B | LEAD | 16.8 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW6020B | ZINC | 86.4 | mg/kg | D | J | SDIL | |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW7471B | MERCURY | 0.151 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 4.4 | ug/kg | | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 9.7 | ug/kg | | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 12.4 | ug/kg | | | | ✓ |
| SIB-SC-D07-5-6-08042022 | 22H0246-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW6020B | ARSENIC | 4.85 | mg/kg | D | J | LDPR | |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW6020B | COPPER | 65.3 | mg/kg | D | J | MSL | |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW6020B | LEAD | 55.6 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW6020B | ZINC | 199 | mg/kg | D | J | SDIL | |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW7471B | MERCURY | 0.344 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 68.3 | ug/kg | D | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 189 | ug/kg | D | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 124 | ug/kg | D | | | ✓ |
| SIB-SC-D08-1-2-08042022 | 22H0246-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW6020B | ARSENIC | 5.47 | mg/kg | D | J | LDPR | |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW6020B | COPPER | 53.3 | mg/kg | D | J | MSL | |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW6020B | LEAD | 28.8 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW6020B | ZINC | 153 | mg/kg | D | J | SDIL | |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW7471B | MERCURY | 0.394 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.7 | ug/kg | D | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 65 | ug/kg | D | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 61 | ug/kg | D | | | ✓ |
| SIB-SC-D08-2-3-08042022 | 22H0246-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW6020B | ARSENIC | 5.23 | mg/kg | D | J | LDPR | |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW6020B | COPPER | 51.6 | mg/kg | D | J | MSL | |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW6020B | LEAD | 34.8 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW6020B | ZINC | 141 | mg/kg | D | J | SDIL | |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW7471B | MERCURY | 0.185 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 4.2 | ug/kg | | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1260 (AROCLOR 1260) | 5.3 | ug/kg | | | | ✓ |
| SIB-SC-D08-3-4-08042022 | 22H0246-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW6020B | ARSENIC | 3.81 | mg/kg | D | J | LDPR | |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW6020B | COPPER | 34.4 | mg/kg | D | J | MSL | |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW6020B | LEAD | 16.2 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW6020B | ZINC | 94.5 | mg/kg | D | J | SDIL | |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW7471B | MERCURY | 0.119 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 28.1 | ug/kg | D | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 28.4 | ug/kg | D | | | ✓ |
| SIB-SC-D08-4-5-08042022 | 22H0246-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW6020B | ARSENIC | 3.33 | mg/kg | D | J | LDPR | |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW6020B | COPPER | 33.3 | mg/kg | D | J | MSL | |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW6020B | LEAD | 5.58 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW6020B | ZINC | 61.6 | mg/kg | D | J | SDIL | |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW7471B | MERCURY | 0.0349 | mg/kg | | J | MSLX,MSP | |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D08-5-6-08042022 | 22H0246-40 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0246 |
| HGL Reviewer | Ken Rapuano 8/8/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %Rs discrepancies for samples SIB-SC-C14-1-2-08/04/2022 and SIB-SC-C14-4-5-08/04/2022 were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-C14-1-2-08/04/2022 | Aroclor 1248 | 160 | -- | J | J | SSH |
| | Aroclor 1254 | 460 | -- | J | J | SSH |
| | Aroclor 1260 | 322 | -- | J | J | SSH |
| SIB-SC-C14-4-5-08/04/2022 | Aroclor 1248 | 30.4 | -- | J | J | SSH |
| | Aroclor 1254 | 93.3 | -- | J | J | SSH |
| | Aroclor 1260 | 114 | -- | J | J | SSH |

Metals – 6020B and 7471B

Serial Dilution: The laboratory did not perform a serial dilution for zinc and the validator applied J-SDIL to all zinc results. Serial dilution is required only when the MS/MSD fails; the MS/MSD was in control for zinc. The HGL reviewer removed the J qualifier and SDIL reason code from all zinc results.

Qualification Modification Table (all results in mg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|-------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| All samples | Zinc | Varies | J | -- | -- | -- |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0248

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2008); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|----------------------------|------------|--------|-----|--------|---------|
| 22H0248 | SIB-SC-D35-1-2-08042022 | 22H0248-06 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-2-3-08042022 | 22H0248-07 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-3-4-08042022 | 22H0248-08 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-4-5-08042022 | 22H0248-09 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-5-6-08042022 | 22H0248-10 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-9-10-08042022 | 22H0248-14 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-10-11-08042022 | 22H0248-15 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-11-12-08042022 | 22H0248-16 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-12-13-08042022 | 22H0248-17 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-13-14-08042022 | 22H0248-18 | SE | ✓ | ✓ | ✓ |
| 22H0248 | SIB-SC-D35-14-15-08042022 | 22H0248-19 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0248 | 14 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0248 | 14 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKJ0480, MS/MSD samples were analyzed using Sample SIB-SC-D35-1-2-08/04/2022. The mercury recoveries in the MS/MSD samples were low; associated sample results were estimated (J-MSL). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW6020B | ARSENIC | 5.56 | mg/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW6020B | COPPER | 52.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW6020B | LEAD | 38.8 | mg/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW6020B | ZINC | 180 | mg/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW7471B | MERCURY | 0.149 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 32.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 57.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 51.2 | ug/kg | D | | | ✓ |
| SIB-SC-D35-1-2-08042022 | 22H0248-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW6020B | ARSENIC | 6.15 | mg/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW6020B | COPPER | 61.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW6020B | LEAD | 48.7 | mg/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW6020B | ZINC | 198 | mg/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW7471B | MERCURY | 0.294 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.4 | ug/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 56.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 62.7 | ug/kg | D | | | ✓ |
| SIB-SC-D35-2-3-08042022 | 22H0248-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW6020B | ARSENIC | 6.84 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW6020B | COPPER | 67.6 | mg/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW6020B | LEAD | 47.1 | mg/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW6020B | ZINC | 232 | mg/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW7471B | MERCURY | 0.337 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 40 | ug/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 63 | ug/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 83.7 | ug/kg | D | | | ✓ |
| SIB-SC-D35-3-4-08042022 | 22H0248-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW6020B | ARSENIC | 5.58 | mg/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW6020B | COPPER | 62.2 | mg/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW6020B | LEAD | 44 | mg/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW7471B | MERCURY | 0.269 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 39.9 | ug/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 74.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 72 | ug/kg | D | | | ✓ |
| SIB-SC-D35-4-5-08042022 | 22H0248-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW6020B | ARSENIC | 5.79 | mg/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW6020B | COPPER | 66.1 | mg/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW6020B | LEAD | 46.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW6020B | ZINC | 218 | mg/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW7471B | MERCURY | 0.244 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 54.3 | ug/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 82.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 90.7 | ug/kg | D | | | ✓ |
| SIB-SC-D35-5-6-08042022 | 22H0248-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW6020B | ARSENIC | 6.1 | mg/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW6020B | COPPER | 64.3 | mg/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW6020B | LEAD | 43 | mg/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW6020B | ZINC | 220 | mg/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW7471B | MERCURY | 0.324 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 58.9 | ug/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-D35-6-7-08/04//2022 | 22H0248-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW6020B | ARSENIC | 6.71 | mg/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW6020B | COPPER | 63.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|---------------------------------|
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW6020B | LEAD | 43.5 | mg/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW6020B | ZINC | 242 | mg/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW7471B | MERCURY | 0.488 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 82.2 | ug/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 185 | ug/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 246 | ug/kg | D | | | ✓ |
| SIB-SC-D35-7-8-08/04//2022 | 22H0248-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW6020B | ARSENIC | 6.26 | mg/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW6020B | COPPER | 66.5 | mg/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW6020B | LEAD | 46.8 | mg/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW6020B | ZINC | 236 | mg/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW7471B | MERCURY | 0.243 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 86.9 | ug/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 109 | ug/kg | D | | | ✓ |
| SIB-SC-D35-8-9-08/04//2022 | 22H0248-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW6020B | ARSENIC | 5.45 | mg/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW6020B | COPPER | 52.9 | mg/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW6020B | LEAD | 36.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW6020B | ZINC | 212 | mg/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW7471B | MERCURY | 0.208 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 66.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 68.5 | ug/kg | D | | | ✓ |
| SIB-SC-D35-9-10-08042022 | 22H0248-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW6020B | ARSENIC | 5.72 | mg/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW6020B | COPPER | 59.3 | mg/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW6020B | LEAD | 39.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW6020B | ZINC | 196 | mg/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW7471B | MERCURY | 0.215 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 47.1 | ug/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 90.6 | ug/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 110 | ug/kg | D | | | ✓ |
| SIB-SC-D35-10-11-08042022 | 22H0248-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW6020B | ARSENIC | 5.08 | mg/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW6020B | COPPER | 38.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW6020B | LEAD | 26.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW6020B | ZINC | 159 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW7471B | MERCURY | 0.216 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 56.6 | ug/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 137 | ug/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 140 | ug/kg | D | | | ✓ |
| SIB-SC-D35-11-12-08042022 | 22H0248-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW6020B | ARSENIC | 5.18 | mg/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW6020B | COPPER | 44.2 | mg/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW6020B | LEAD | 32 | mg/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW6020B | ZINC | 191 | mg/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW7471B | MERCURY | 0.238 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 42.6 | ug/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 56.3 | ug/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 54.6 | ug/kg | D | | | ✓ |
| SIB-SC-D35-12-13-08042022 | 22H0248-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW6020B | ARSENIC | 5.93 | mg/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW6020B | COPPER | 55.2 | mg/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW6020B | LEAD | 43.3 | mg/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW6020B | ZINC | 249 | mg/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW7471B | MERCURY | 0.276 | mg/kg | | J | MSL,MSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|---------------------------|
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 46.2 | ug/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 62.3 | ug/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 77.3 | ug/kg | D | | | ✓ |
| SIB-SC-D35-13-14-08042022 | 22H0248-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW6020B | ARSENIC | 5.6 | mg/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW6020B | COPPER | 55.2 | mg/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW6020B | LEAD | 36.5 | mg/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW6020B | ZINC | 242 | mg/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW7471B | MERCURY | 0.156 | mg/kg | | J | MSL,MSP | |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 69.6 | ug/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 108 | ug/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-D35-14-15-08042022 | 22H0248-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0248 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

MS/MSD: The validator applied reason code MSL to all mercury results; the mercury %R was <30% in both the MS and MSD and the correct qualifier is MSLX.

Qualification Modification Table (all results in mg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|-------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| All samples | Mercury | Varies | J | J | J | MSLX,MSP |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0254

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22H0254 | SIB-SC-E11-1-2-08042022 | 22H0254-06 | SE | ✓ | ✓ | ✓ |
| 22H0254 | SIB-SC-E11-2-3-08042022 | 22H0254-07 | SE | ✓ | ✓ | ✓ |
| 22H0254 | SIB-SC-E11-3-4-08042022 | 22H0254-08 | SE | ✓ | ✓ | ✓ |
| 22H0254 | SIB-SC-E11-4-5-08042022 | 22H0254-09 | SE | ✓ | ✓ | ✓ |
| 22H0254 | SIB-SC-E11-5-6-08042022 | 22H0254-10 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0254 | 5 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-E11-1-2-08/04/2022
- SIB-SC-E11-3-4-08/04/2022
- SIB-SC-E11-4-5-08/04/2022
- SIB-SC-E11-5-6-08/04/2022

Field Duplicates

No field duplicates were submitted.

Reporting Limits

All samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0254 | 5 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was assessed from the laboratory control (LCS) samples and precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not assessed.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0254 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %Rs discrepancies for samples SIB-SC-E11-1-2-08/04/2022 and SIB-SC-E11-5-6-08/04/2022 were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E11-1-2-08/04/2022 | Aroclor 1248 | 177 | -- | J | J | SSH |
| | Aroclor 1254 | 580 | -- | J | J | SSH |
| | Aroclor 1260 | 313 | -- | J | J | SSH |
| SIB-SC-E11-5-6-08/04/2022 | Aroclor 1248 | 146 | -- | J | J | SSH |
| | Aroclor 1254 | 321 | -- | J | J | SSH |
| | Aroclor 1260 | 173 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0265

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0265 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKJ0749, MS/MSD samples were analyzed using Sample SIB-SC-E10-2-3-08/05/2022. Mercury was not recovered in the MSD sample, but was in control in the associated MS sample; associated results were estimated (J-MSLX). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

For Batch BKI0664, MS/MSD samples were analyzed using Sample SIB-SC-E10-2-3-08/05/2022. The MSD %R value for lead was greater than the upper control limit, but was in control in the associated MS sample; associated detected results were estimated (J-MSH). The RPD value for lead was greater than the control limit; all sample results in this batch were estimated (J-MSP).

Laboratory Duplicates

One sample from each laboratory batch was extracted and analyzed in duplicate. Relative percent difference (RPD) values were calculated for detected analytes where results are greater than five times the method detection limit (MDL). With the exceptions noted below, RPD values were less than the 20% control limit.

For Sample, SIB-SC-E10-2-3-08/05/2022, the RPD values for mercury and lead were greater than the control limit. Results for these analytes were estimated (J-LDPR) for all samples.

Field Duplicates

Samples SIB-SC-E10-1-2-08/05/2022 and FD-26-08/05/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0265 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

Matrix spike/Matrix spike duplicates (MS/MSD) samples were analyzed at the appropriate frequency. No action is taken unless both the MS and MSD percent recovery (%R) values are outside the control limits. Precision is evaluated using the relative percent difference (RPD) values calculated between the MS and MSD results. Any RPD values outside the control limits indicate uncertainty in the measured results for the sample. For AR1016 outliers, results for AR1016, AR1221, AR1232, and AR1242 are qualified. For AR1260 outliers, results for AR1248, AR1254, AR1260, AR1262, and AR1268 are qualified.

Sample SIB-SC-E10-2-3-08/05/2022 was analyzed as the batch MS/MSD. The %R value for AR1260 was greater than the upper control limit in the MS/MSD; positive results in the parent samples were estimated (J-MSH).

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. Both surrogates were analyzed on two columns. Data was not qualified if only one result of the four was outside of the control limits. No qualifiers were assigned for QC surrogate outliers

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-E10-1-2-08/05/2022
- FD-26-08/05/2022
- SIB-SC-E10-2-3-08/05/2022
- SIB-SC-E10-3-4-08/05/2022
- SIB-SC-E10-4-5-08/05/2022
- SIB-SC-E10-5-6-08/05/2022
- SIB-SC-E09-1-2-08/05/2022
- SIB-SC-E09-2-3-08/05/2022
- SIB-SC-E09-3-4-08/05/2022
- SIB-SC-E10-2-3-08/05/2022 MS

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For waters, the difference must be less than the RL. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, FD-26-08/05/2022 & SIB-SC-E10-1-2-08/05/2022, were submitted. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recovery values. Precision was acceptable based on the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Data were estimated based on MS/MSD accuracy outliers.

All data, as qualified, are acceptable for use.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0265 | SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SE | ✓ | ✓ | ✓ |
| 22H0265 | FD-26-08/05/2022 | 22H0265-03 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E10-2-3-08052022 | 22H0265-04 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E10-3-4-08052022 | 22H0265-05 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E10-4-5-08052022 | 22H0265-06 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E10-5-6-08052022 | 22H0265-07 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E09-1-2-08052022 | 22H0265-17 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E09-2-3-08052022 | 22H0265-18 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E09-3-4-08052022 | 22H0265-19 | SE | ✓ | ✓ | ✓ |
| 22H0265 | SIB-SC-E09-4-5-08052022 | 22H0265-20 | SE | ✓ | ✓ | ✓ |

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles >5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW6020B | ARSENIC | 6.43 | mg/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW6020B | COPPER | 116 | mg/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW6020B | LEAD | 79.1 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW6020B | ZINC | 328 | mg/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW7471B | MERCURY | 0.261 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1248 (AROCOR 1248) | 204 | ug/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1254 (AROCOR 1254) | 602 | ug/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1260 (AROCOR 1260) | 332 | ug/kg | D | | | ✓ |
| SIB-SC-E10-1-2-08/05/2022 | 22H0265-02 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW6020B | ARSENIC | 7.16 | mg/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW6020B | CADMIUM | 0.61 | mg/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW6020B | COPPER | 135 | mg/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW6020B | LEAD | 108 | mg/kg | D | J | MSH,MSP,LDPR | |
| FD-26-08/05/2022 | 22H0265-03 | SW6020B | ZINC | 358 | mg/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW7471B | MERCURY | 0.416 | mg/kg | | J | MSLX,MSP,LDPR | |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | D U | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1248 (AROCOR 1248) | 171 | ug/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1254 (AROCOR 1254) | 499 | ug/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1260 (AROCOR 1260) | 274 | ug/kg | D | | | ✓ |
| FD-26-08/05/2022 | 22H0265-03 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW6020B | ARSENIC | 4.29 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW6020B | COPPER | 68.2 | mg/kg | D | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW6020B | LEAD | 41.5 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW6020B | ZINC | 140 | mg/kg | D | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW7471B | MERCURY | 0.205 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1248 (AROCOLOR 1248) | 61.6 | ug/kg | D | J | MSH | |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1254 (AROCOLOR 1254) | 148 | ug/kg | D | J | MSH | |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1260 (AROCOLOR 1260) | 113 | ug/kg | D | J | MSH | |
| SIB-SC-E10-2-3-08/05/2022 | 22H0265-04 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW6020B | ARSENIC | 5.96 | mg/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW6020B | COPPER | 88.4 | mg/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW6020B | LEAD | 47.9 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW6020B | ZINC | 211 | mg/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW7471B | MERCURY | 0.355 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1248 (AROCOLOR 1248) | 72.7 | ug/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1254 (AROCOLOR 1254) | 189 | ug/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1260 (AROCOLOR 1260) | 204 | ug/kg | D | | | ✓ |
| SIB-SC-E10-3-4-08/05/2022 | 22H0265-05 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW6020B | ARSENIC | 6.23 | mg/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW6020B | CADMIUM | 0.52 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW6020B | COPPER | 81.4 | mg/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW6020B | LEAD | 69.2 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW6020B | ZINC | 273 | mg/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW7471B | MERCURY | 0.46 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 359 | ug/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 203 | ug/kg | D | | | ✓ |
| SIB-SC-E10-4-5-08/05/2022 | 22H0265-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW6020B | ARSENIC | 4.22 | mg/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW6020B | CADMIUM | 0.21 | mg/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW6020B | COPPER | 43.9 | mg/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW6020B | LEAD | 22.7 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW6020B | ZINC | 113 | mg/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW7471B | MERCURY | 0.242 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 66.1 | ug/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 182 | ug/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-E10-5-6-08/05/2022 | 22H0265-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW6020B | ARSENIC | 5.52 | mg/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW6020B | COPPER | 73.7 | mg/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW6020B | LEAD | 53.6 | mg/kg | D | J | MSH,MSP,LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|---------------|------------------------------|
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW6020B | ZINC | 222 | mg/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW7471B | MERCURY | 0.331 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 72.4 | ug/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 205 | ug/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 143 | ug/kg | D | | | ✓ |
| SIB-SC-E09-1-2-08/05/2022 | 22H0265-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW6020B | ARSENIC | 6.13 | mg/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW6020B | COPPER | 63.9 | mg/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW6020B | LEAD | 39.8 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW7471B | MERCURY | 0.416 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 64.5 | ug/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 172 | ug/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 116 | ug/kg | D | | | ✓ |
| SIB-SC-E09-2-3-08/05/2022 | 22H0265-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW6020B | ARSENIC | 6.02 | mg/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW6020B | COPPER | 59.9 | mg/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW6020B | LEAD | 41.6 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW6020B | ZINC | 223 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|---------------|------------------------------------|
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW7471B | MERCURY | 0.452 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1248 (AROCOLOR 1248) | 155 | ug/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1254 (AROCOLOR 1254) | 499 | ug/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1260 (AROCOLOR 1260) | 238 | ug/kg | D | | | ✓ |
| SIB-SC-E09-3-4-08/05/2022 | 22H0265-19 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW6020B | ARSENIC | 3.66 | mg/kg | D | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW6020B | COPPER | 39.2 | mg/kg | D | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW6020B | LEAD | 8.85 | mg/kg | D | J | MSH,MSP,LDPR | |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW6020B | ZINC | 80.6 | mg/kg | D | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW7471B | MERCURY | 0.0598 | mg/kg | | J | MSLX,MSP,LDPR | |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1254 (AROCOLOR 1254) | 29.3 | ug/kg | D | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-E09-4-5-08/05/2022 | 22H0265-20 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0265 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %Rs discrepancies for samples SIB-SC-E10-1-2-08/05/2022, FD-26-08/05/2022, SIB-SC-E10-3-4-08/05/2022, and SIB-SC-E09-3-4-08/05/2022 were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E10-1-2-08/05/2022 | Aroclor 1248 | 204 | -- | J | J | SSH |
| | Aroclor 1254 | 602 | -- | J | J | SSH |
| | Aroclor 1260 | 332 | -- | J | J | SSH |
| FD-26-08/05/2022 | Aroclor 1248 | 171 | -- | J | J | SSH |
| | Aroclor 1254 | 499 | -- | J | J | SSH |
| | Aroclor 1260 | 274 | -- | J | J | SSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E10-3-4-08/05/2022 | Aroclor 1248 | 72.7 | -- | J | J | SSH |
| | Aroclor 1254 | 189 | -- | J | J | SSH |
| | Aroclor 1260 | 204 | -- | J | J | SSH |
| SIB-SC-E09-3-4-08/05/2022 | Aroclor 1248 | 155 | -- | J | J | SSH |
| | Aroclor 1254 | 499 | -- | J | J | SSH |
| | Aroclor 1260 | 238 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0278

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020)

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22H0278 | SIB-SC-E09-5-6-08052022 | 22H0278-01 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-E08-1-2-08052022 | 22H0278-27 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-E08-2-3-08052022 | 22H0278-28 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-E08-3-4-08052022 | 22H0278-29 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-E08-4-5-08052022 | 22H0278-30 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-E08-5-6-08052022 | 22H0278-31 | SE | ✓ | ✓ | ✓ |
| 22H0278 | SIB-SC-F11-1-2-08062022 | 22H0278-36 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0278 | 25 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

For 24 samples, the date suffix in the sample ID is expressed as DDMMYYYY instead of DD/MM/YYYY in the "sample_name" field. All sample IDs in the "sys_sample_code" field match the chain-of-custody.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 1 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-F11-1-2-08/06/2022 (5X)
- SIB-SC-F11-2-3-08/06/2022 (5X/25X)
- SIB-SC-F11-3-4-08/06/2022 (5X/25X)

Field Duplicates

No field duplicates were submitted.

Reported Results

Samples SIB-SC-F11-2-3-08/06/2022 and SIB-SC-F11-3-4-08/06/2022 were initially analyzed at a 5x dilution. The concentrations of Aroclor 1254 exceeded the calibration range of the instrument and were E-flagged by the laboratory. The samples were re-analyzed at a 25x dilution. The results for Aroclor 1254 should be reported from the 25x dilution; the results from the 5x dilution were qualified as do-not-report (DNR-EXC). Results for all other Aroclors should be reported from the 5x dilution and were qualified as do-not-report (DNR-EXC) in the 25x dilution.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0278 | 25 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKI0694, MS/MSD samples were analyzed using Sample SIB-SC-F35-10-11-08/05/2022. Arsenic was less than the lower control limit in the MD sample, but was in control in the associated MSD sample; associated results were estimated (J-MSL).

For Batch BKJ0481, MS/MSD samples were analyzed using Sample SIB-SC-F35-5-6-08/05/2022. The %R values for mercury were less than the lower control limit in the MS/MSD samples; associated field sample results were estimated (J-MSLX/MSL). The RPD value for mercury was greater than the control limit; all sample results in this batch were estimated (J-MSP).

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW6020B | ARSENIC | 3.29 | mg/kg | D | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW6020B | COPPER | 32 | mg/kg | D | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW6020B | LEAD | 5.89 | mg/kg | D | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW6020B | ZINC | 68.3 | mg/kg | D | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW7471B | MERCURY | 0.0348 | mg/kg | | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 4.8 | ug/kg | | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 15 | ug/kg | | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 6.2 | ug/kg | | | | ✓ |
| SIB-SC-E09-5-6-08052022 | 22H0278-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW6020B | ARSENIC | 5.69 | mg/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW6020B | COPPER | 52.4 | mg/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW6020B | LEAD | 38.1 | mg/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW6020B | ZINC | 178 | mg/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW7471B | MERCURY | 0.158 | mg/kg | | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 26.5 | ug/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 44 | ug/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 44.7 | ug/kg | D | | | ✓ |
| SIB-SC-F35-1-2-08052022 | 22H0278-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW6020B | ARSENIC | 6.89 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW6020B | COPPER | 143 | mg/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW6020B | LEAD | 54.6 | mg/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW6020B | ZINC | 254 | mg/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW7471B | MERCURY | 0.376 | mg/kg | | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 38 | ug/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 59.8 | ug/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 84.1 | ug/kg | D | | | ✓ |
| SIB-SC-F35-2-3-08052022 | 22H0278-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW6020B | ARSENIC | 6.73 | mg/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW6020B | COPPER | 65.3 | mg/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW6020B | LEAD | 38.4 | mg/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW6020B | ZINC | 227 | mg/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW7471B | MERCURY | 0.342 | mg/kg | | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.5 | ug/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 55.6 | ug/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 69.9 | ug/kg | D | | | ✓ |
| SIB-SC-F35-3-4-08052022 | 22H0278-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW6020B | ARSENIC | 6.29 | mg/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW6020B | COPPER | 73.8 | mg/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW6020B | LEAD | 48.5 | mg/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW6020B | ZINC | 233 | mg/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW7471B | MERCURY | 0.443 | mg/kg | | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 48 | ug/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 85.2 | ug/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 88.5 | ug/kg | D | | | ✓ |
| SIB-SC-F35-4-5-08052022 | 22H0278-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW6020B | ARSENIC | 6.39 | mg/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW6020B | COPPER | 68.7 | mg/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW6020B | LEAD | 38.3 | mg/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW6020B | ZINC | 224 | mg/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW7471B | MERCURY | 0.312 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.8 | ug/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 82.6 | ug/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 93.1 | ug/kg | D | | | ✓ |
| SIB-SC-F35-5-6-08052022 | 22H0278-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW6020B | ARSENIC | 5.55 | mg/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW6020B | COPPER | 68.5 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW6020B | LEAD | 32.6 | mg/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW6020B | ZINC | 190 | mg/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW7471B | MERCURY | 0.389 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.5 | ug/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 70.7 | ug/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 91 | ug/kg | D | | | ✓ |
| SIB-SC-F35-6-7-08/05//2022 | 22H0278-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW6020B | ARSENIC | 6.71 | mg/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW6020B | COPPER | 83.3 | mg/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW6020B | LEAD | 47.1 | mg/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW6020B | ZINC | 257 | mg/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW7471B | MERCURY | 0.376 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 77.2 | ug/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 226 | ug/kg | D | | | ✓ |
| SIB-SC-F35-7-8-08/05//2022 | 22H0278-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW6020B | ARSENIC | 5.9 | mg/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW6020B | COPPER | 69 | mg/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW6020B | LEAD | 43 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW6020B | ZINC | 227 | mg/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW7471B | MERCURY | 0.349 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.4 | ug/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 85.8 | ug/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-F35-8-9-08/05//2022 | 22H0278-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW6020B | ARSENIC | 4.78 | mg/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW6020B | CADMIUM | 0.28 | mg/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW6020B | COPPER | 47.2 | mg/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW6020B | LEAD | 29.7 | mg/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW6020B | ZINC | 189 | mg/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW7471B | MERCURY | 0.201 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 38.8 | ug/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 64.2 | ug/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 70.2 | ug/kg | D | | | ✓ |
| SIB-SC-F35-9-10-08052022 | 22H0278-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW6020B | ARSENIC | 3.74 | mg/kg | D | J | MSL | |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW6020B | COPPER | 36 | mg/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW6020B | LEAD | 23 | mg/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW6020B | ZINC | 134 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW7471B | MERCURY | 0.176 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 38.4 | ug/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 59 | ug/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 53.6 | ug/kg | D | | | ✓ |
| SIB-SC-F35-10-11-08052022 | 22H0278-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW6020B | ARSENIC | 4.21 | mg/kg | D | J | MSL | |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW6020B | CADMIUM | 0.29 | mg/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW6020B | COPPER | 42.1 | mg/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW6020B | LEAD | 33.8 | mg/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW6020B | ZINC | 155 | mg/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW7471B | MERCURY | 0.183 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 39.2 | ug/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 81.6 | ug/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 93.6 | ug/kg | D | | | ✓ |
| SIB-SC-F35-11-12-08052022 | 22H0278-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW6020B | ARSENIC | 5.26 | mg/kg | D | J | MSL | |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW6020B | COPPER | 48.3 | mg/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW6020B | LEAD | 33.9 | mg/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW6020B | ZINC | 189 | mg/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW7471B | MERCURY | 0.234 | mg/kg | | J | MSLX,MSL,MSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 50 | ug/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 105 | ug/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-F35-12-13-08052022 | 22H0278-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW6020B | ARSENIC | 4.61 | mg/kg | D | J | MSL | |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW6020B | COPPER | 36.9 | mg/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW6020B | LEAD | 25.9 | mg/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW6020B | ZINC | 162 | mg/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW7471B | MERCURY | 0.292 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 65.8 | ug/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 132 | ug/kg | D | | | ✓ |
| SIB-SC-F35-13-14-08052022 | 22H0278-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW6020B | ARSENIC | 4.96 | mg/kg | D | J | MSL | |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW6020B | COPPER | 49.4 | mg/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW6020B | LEAD | 37.5 | mg/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW6020B | ZINC | 205 | mg/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW7471B | MERCURY | 0.147 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.3 | ug/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 90.3 | ug/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 114 | ug/kg | D | | | ✓ |
| SIB-SC-F35-14-15-08052022 | 22H0278-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW6020B | ARSENIC | 5.57 | mg/kg | D | J | MSL | |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW6020B | COPPER | 95.4 | mg/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW6020B | LEAD | 69.4 | mg/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW6020B | ZINC | 283 | mg/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW7471B | MERCURY | 0.274 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 93.5 | ug/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 219 | ug/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 170 | ug/kg | D | | | ✓ |
| SIB-SC-E08-1-2-08052022 | 22H0278-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW6020B | ARSENIC | 4.6 | mg/kg | D | J | MSL | |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW6020B | COPPER | 69.8 | mg/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW6020B | LEAD | 58 | mg/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW6020B | ZINC | 217 | mg/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW7471B | MERCURY | 0.336 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 62 | ug/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 143 | ug/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 135 | ug/kg | D | | | ✓ |
| SIB-SC-E08-2-3-08052022 | 22H0278-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW6020B | ARSENIC | 3.53 | mg/kg | D | J | MSL | |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW6020B | COPPER | 37.3 | mg/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW6020B | LEAD | 25.4 | mg/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW6020B | ZINC | 119 | mg/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW7471B | MERCURY | 0.407 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1248 (AROCLOR 1248) | 45.5 | ug/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1254 (AROCLOR 1254) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-E08-3-4-08052022 | 22H0278-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW6020B | ARSENIC | 5.27 | mg/kg | D | J | MSL | |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW6020B | CADMIUM | 0.58 | mg/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW6020B | COPPER | 63.9 | mg/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW6020B | LEAD | 56.8 | mg/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW6020B | ZINC | 229 | mg/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW7471B | MERCURY | 0.087 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1248 (AROCLOR 1248) | 78.4 | ug/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1254 (AROCLOR 1254) | 178 | ug/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1260 (AROCLOR 1260) | 149 | ug/kg | D | | | ✓ |
| SIB-SC-E08-4-5-08052022 | 22H0278-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW6020B | ARSENIC | 4.12 | mg/kg | D | J | MSL | |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW6020B | CADMIUM | 0.26 | mg/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW6020B | COPPER | 39.5 | mg/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW6020B | LEAD | 19.3 | mg/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW6020B | ZINC | 104 | mg/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW7471B | MERCURY | 0.227 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1248 (AROCLOR 1248) | 23.8 | ug/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1254 (AROCLOR 1254) | 56.6 | ug/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1260 (AROCLOR 1260) | 42.3 | ug/kg | D | | | ✓ |
| SIB-SC-E08-5-6-08052022 | 22H0278-31 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW6020B | ARSENIC | 8.46 | mg/kg | D | J | MSL | |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW6020B | COPPER | 117 | mg/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW6020B | LEAD | 57.5 | mg/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW6020B | ZINC | 335 | mg/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW7471B | MERCURY | 3.47 | mg/kg | D | J | MSLX,MSL,MSP | |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1248 (AROCLOR 1248) | 132 | ug/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1254 (AROCLOR 1254) | 385 | ug/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1260 (AROCLOR 1260) | 152 | ug/kg | D | | | ✓ |
| SIB-SC-F11-1-2-08062022 | 22H0278-36 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW6020B | ARSENIC | 7.51 | mg/kg | D | J | MSL | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW6020B | CADMIUM | 0.66 | mg/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW6020B | COPPER | 167 | mg/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW6020B | LEAD | 142 | mg/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW6020B | ZINC | 540 | mg/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW7471B | MERCURY | 0.334 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1248 (AROCLOR 1248) | 782 | ug/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1254 (AROCLOR 1254) | 2480 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1260 (AROCLOR 1260) | 604 | ug/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 1470 | ug/kg | D | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 2620 | ug/kg | D | | | ✓ |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 653 | ug/kg | D | DNR | EXC | |
| SIB-SC-F11-2-3-08062022 | 22H0278-37RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW6020B | ARSENIC | 4.82 | mg/kg | D | J | MSL | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW6020B | CADMIUM | 0.33 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|--------------|------------------------------|
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW6020B | COPPER | 100 | mg/kg | D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW6020B | LEAD | 49.7 | mg/kg | D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW6020B | ZINC | 262 | mg/kg | D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW7471B | MERCURY | 0.271 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1248 (AROCLOR 1248) | 869 | ug/kg | D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1254 (AROCLOR 1254) | 2870 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1260 (AROCLOR 1260) | 620 | ug/kg | P1 D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 1660 | ug/kg | D | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 3580 | ug/kg | D | | | ✓ |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 624 | ug/kg | D | DNR | EXC | |
| SIB-SC-F11-3-4-08062022 | 22H0278-38RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW6020B | ARSENIC | 3.02 | mg/kg | D | J | MSL | |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW6020B | COPPER | 35.4 | mg/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW6020B | LEAD | 10.6 | mg/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW6020B | ZINC | 79 | mg/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW7471B | MERCURY | 0.0421 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1248 (AROCLOR 1248) | 47.5 | ug/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1254 (AROCLOR 1254) | 119 | ug/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1260 (AROCLOR 1260) | 27.6 | ug/kg | D | | | ✓ |
| SIB-SC-F11-4-5-08062022 | 22H0278-39 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW6020B | ARSENIC | 3.24 | mg/kg | D | J | MSL | |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW6020B | COPPER | 37.4 | mg/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW6020B | LEAD | 10.2 | mg/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW6020B | ZINC | 79.4 | mg/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW7471B | MERCURY | 0.0507 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1248 (AROCLOR 1248) | 51.5 | ug/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1254 (AROCLOR 1254) | 149 | ug/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1260 (AROCLOR 1260) | 25.5 | ug/kg | D | | | ✓ |
| SIB-SC-F11-5-6-08062022 | 22H0278-40 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0278 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

The summary table in the introduction of the DV report is missing most samples in this SDG.

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %Rs discrepancies for samples SIB-SC-F11-1-2-08/06/2022, SIB-SC-F11-2-3-08/06/2022 (5x dilution only), and SIB-SC-F11-3-4-08/06/2022 (5x dilution only) were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F11-1-2-08/06/2022 | Aroclor 1248 | 132 | -- | J | J | SSH |
| | Aroclor 1254 | 385 | -- | J | J | SSH |
| | Aroclor 1260 | 152 | -- | J | J | SSH |
| SIB-SC-F11-2-3-08/06/2022 (5x dilution) | Aroclor 1248 | 782 | -- | J | J | SSH |
| | Aroclor 1260 | 604 | -- | J | J | SSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F11-3-4-08/06/2022 (5x dilution) | Aroclor 1248 | 869 | -- | J | J | SSH |
| | Aroclor 1260 | 620 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0286

July 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0286 | SIB-SC-F12-1-2-08062022 | 22H0286-10 | SE | ✓ | ✓ | ✓ |
| 22H0286 | SIB-SC-F12-2-3-08062022 | 22H0286-11 | SE | ✓ | ✓ | ✓ |
| 22H0286 | SIB-SC-F12-3-4-08062022 | 22H0286-12 | SE | ✓ | ✓ | ✓ |
| 22H0286 | SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SE | ✓ | ✓ | ✓ |
| 22H0286 | FD-27-08/06/2022 | 22H0286-14 | SE | ✓ | ✓ | ✓ |
| 22H0286 | SIB-SC-F12-5-6-08062022 | 22H0286-15 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0286 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 2 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Samples SIB-SC-F12-1-2-08/06/2022 was used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The percent recovery (%R) values for Aroclor 1260 were greater than the upper control limit for the MS and MSD samples. Positive results for the associated aroclors (1248/1254/1262/1268) in the parent sample were qualified (J-MSH). All relative percent difference (RPD) values were in control.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. The %R values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, surrogates were not detected due to the dilution of the sample and were flagged "D1" by the laboratory. No qualifiers were assigned.

- SIB-SC-F12-2-3-08/06/2022 (25X)
- SIB-SC-F12-3-4-08/06/2022 (250X)
- SIB-SC-F12-4-5-08/06/2022 (25X)
- FD-27-08/06/2022 (25X)

Field Duplicates

Samples FD-27-08/06/2022 and SIB-SC-F12-4-5-08/06/2022 were submitted as field duplicates. Precision was acceptable.

Reported Results

Samples SIB-SC-F12-3-4-08/06/2022 was initially analyzed at a 50x dilution. The concentration of AR1254 exceeded the calibration range of the instrument and was E-flagged by the laboratory. The sample was re-analyzed at a 250x dilution. The results for AR1254 should be reported from the 250x dilution; the results from the 50x dilution were qualified as do-not-report (DNR-EXC). Results for all other Aroclors should be reported from the 50x dilution and were qualified as do-not-report (DNR-EXC) in the 250x dilution.

Sample FD-27-08/06/2022 was reported at 5x and 25x dilutions. All results from the 5x dilution were qualified as do-not-report (DNR-EXC). Results for the sample were reported at 25x.

Reporting Limits

All samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

Results were estimated due to MS/MSD accuracy outliers and results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0286 | 6 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

No matrix spike/matrix spike duplicates were reported for the metals and mercury analyses. Accuracy was evaluated using the laboratory control sample recoveries. Precision was evaluated from the field duplicate samples.

Laboratory Duplicates

No laboratory duplicates were reported for the metals and mercury analyses. Precision was evaluated from the field duplicate samples.

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

FD-27-08/06/2022 & SIB-SC-F12-4-5-08/06/2022

The relative percent difference (RPD) value for mercury was greater than the control limit; mercury results in these two samples were estimated (J-FDPR).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample recoveries and precision was acceptable as demonstrated by the field duplicate RPD values.

Results were estimated based on field duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW6020B | ARSENIC | 9.8 | mg/kg | D | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW6020B | CADMIUM | 0.59 | mg/kg | D | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW6020B | COPPER | 259 | mg/kg | D | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW6020B | LEAD | 287 | mg/kg | D | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW6020B | ZINC | 558 | mg/kg | D | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW7471B | MERCURY | 0.555 | mg/kg | | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 164 | ug/kg | D | J | MSH | |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 452 | ug/kg | D | J | MSH | |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 285 | ug/kg | D | J | MSH | |
| SIB-SC-F12-1-2-08062022 | 22H0286-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW6020B | ARSENIC | 15.7 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW6020B | CADMIUM | 0.76 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW6020B | COPPER | 160 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW6020B | LEAD | 618 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW6020B | ZINC | 763 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW7471B | MERCURY | 10.2 | mg/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1248 (AROCLOR 1248) | 902 | ug/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 2890 | ug/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 844 | ug/kg | D | | | ✓ |
| SIB-SC-F12-2-3-08062022 | 22H0286-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW6020B | ARSENIC | 40.2 | mg/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW6020B | CADMIUM | 1.66 | mg/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW6020B | COPPER | 235 | mg/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW6020B | LEAD | 928 | mg/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW6020B | ZINC | 1000 | mg/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW7471B | MERCURY | 0.154 | mg/kg | | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 2800 | ug/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 8830 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 2250 | ug/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 4640 | ug/kg | D | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 10400 | ug/kg | D | | | ✓ |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 2380 | ug/kg | D | DNR | EXC | |
| SIB-SC-F12-3-4-08062022 | 22H0286-12RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW6020B | ARSENIC | 8.02 | mg/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW6020B | COPPER | 82.3 | mg/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW6020B | LEAD | 97.6 | mg/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW6020B | ZINC | 328 | mg/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW7471B | MERCURY | 0.525 | mg/kg | | J | FDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1248 (AROCLOR 1248) | 262 | ug/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 737 | ug/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 260 | ug/kg | D | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | 22H0286-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW6020B | ARSENIC | 7.03 | mg/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW6020B | CADMIUM | 0.45 | mg/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW6020B | COPPER | 84 | mg/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW6020B | LEAD | 140 | mg/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW6020B | ZINC | 366 | mg/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14 | SW7471B | MERCURY | 0.171 | mg/kg | | J | FDPR | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | Aroclor 1262 | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 308 | ug/kg | D | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 1040 | ug/kg | E D | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 421 | ug/kg | D | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | 311 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 1010 | ug/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 404 | ug/kg | D | | | ✓ |
| FD-27-08/06/2022 | 22H0286-14RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW6020B | ARSENIC | 4.55 | mg/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW6020B | COPPER | 51.6 | mg/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW6020B | LEAD | 147 | mg/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW6020B | ZINC | 112 | mg/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW7471B | MERCURY | | mg/kg | U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1248 (AROCOLOR 1248) | 26.6 | ug/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1254 (AROCOLOR 1254) | 73.8 | ug/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1260 (AROCOLOR 1260) | 32.4 | ug/kg | D | | | ✓ |
| SIB-SC-F12-5-6-08062022 | 22H0286-15 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F12-2-3-08062022 | Calc | CALC | SUM OF AROCLORS | 4700 | ug/kg | | | | ✓ |
| SIB-SC-F12-3-4-08062022 | Calc | CALC | SUM OF AROCLORS | 17500 | ug/kg | | | | ✓ |
| SIB-SC-F12-4-5-08/06/2022 | Calc | CALC | SUM OF AROCLORS | 1310 | ug/kg | | | | ✓ |
| SIB-SC-F12-5-6-08062022 | Calc | CALC | SUM OF AROCLORS | 143 | ug/kg | | | | ✓ |
| SIB-SC-F12-1-2-08062022 | Calc | CALC | SUM OF AROCLORS | 928 | ug/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0286 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %R discrepancy for sample FD-27-08/06/2022 (5x dilution only) was >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Reported Result: Sample FD-27-08/06/2022 was reanalyzed at a 25x dilution to quantify Aroclor 1254; the validator qualified all results from the 5x dilution with DNR-EXC. No reason is given for not using the 5x results for all other analytes. In the judgment of the HGL reviewer, the 5x dilution result should be used for all analytes reported for this sample except Aroclor 1254. The HGL reviewer also updated the "reportable_result" field to match the status of each result reported for the two dilution levels for sample FD-27-08/06/2022.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|------------------------------------|-------------------------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| FD-27-08/06/2022 (5x dilution) | Aroclor 1248 ⁽¹⁾ | 308 | DNR | J | J | SSH |
| | Aroclor 1260 ⁽¹⁾ | 421 | DNR | J | J | SSH |
| | All ND results ⁽¹⁾ | Varies | DNR | U | U | -- |
| FD-27-08/06/2022 (25x dilution) | Aroclor 1248 ⁽²⁾ | 311 | -- | DNR | DNR | EXC |
| | Aroclor 1260 ⁽²⁾ | 404 | -- | DNR | DNR | EXC |
| | All ND results ⁽²⁾ | Varies | U | DNR | DNR | EXC |

⁽¹⁾ The reportable_result field is also changed from No to Yes.

⁽²⁾ The reportable_result field is also changed from Yes to No.

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0290

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-------------------------|------------|--------|-----|--------|---------|
| 22H0290 | SIB-SC-F17-1-2-08062022 | 22H0290-07 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-F17-2-3-08062022 | 22H0290-08 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-F17-3-4-08062022 | 22H0290-09 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-F17-4-5-08062022 | 22H0290-10 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-F17-5-6-08062022 | 22H0290-11 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-E07-1-2-08062022 | 22H0290-21 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-E07-2-3-08062022 | 22H0290-22 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-E07-3-4-08062022 | 22H0290-23 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-E07-4-5-08062022 | 22H0290-24 | SE | ✓ | ✓ | ✓ |
| 22H0290 | SIB-SC-E07-5-6-08062022 | 22H0290-25 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment and surface water samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0290 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

With the noted exception, the laboratory submitted all required deliverables for a compliance level review.

For the method blank, the surrogate decachlorobiphenyl (DCBP) was present in the chromatogram but was not identified on the quantitation report. The lab was contacted and submitted a revised PDF; however, the information was still missing. Since the recovery values for the three reported surrogates were acceptable, the method blank data was judged as not impacted.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

For all samples, the date suffix in the sample ID is expressed as DDMMYYYY instead of DD/MM/YYYY in the "sample_name" field. All sample IDs in the "sys_sample_code" field match the chain-of-custody.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| 1 | Standard Reference Material (SRM) | ✓ | Target Analyte List |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. Both surrogates were analyzed on two columns. Data was not qualified if only one result of the four was outside of the control limits. No qualifiers were assigned for QC surrogate outliers.

For the following samples, the %R values of DCBP were greater than the upper control limit on column 1. The %R value of DCBP was within the control limit on column 2, and the %R values of TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-F17-2-3-08/06/2022
- SIB-SC-F17-3-4-08/06/2022

Field Duplicates

No field duplicates were submitted.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exception, accuracy was acceptable as demonstrated by the surrogate, SRM, and LCS/LCSD recoveries. Precision was acceptable based on the LCS/LCSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0290 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

The collection times for the following samples did not match between the EDD and the laboratory report:

| Client ID | COC Collection Time | EDD Collection Time |
|-------------------------|---------------------|---------------------|
| SIB-SC-E07-1-2-08062022 | 8/6/22 14:18 | 8/6/22 10:18 |
| SIB-SC-E07-2-3-08062022 | 8/6/22 14:21 | 8/6/22 10:21 |
| SIB-SC-E07-3-4-08062022 | 8/6/22 14:24 | 8/6/22 10:24 |
| SIB-SC-E07-4-5-08062022 | 8/6/22 14:27 | 8/6/22 10:27 |
| SIB-SC-E07-5-6-08062022 | 8/6/22 14:30 | 8/6/22 10:30 |

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB06-08042022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0215. EB06-08042022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was assessed from the laboratory control (LCS) samples and precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not assessed.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample recoveries and precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW6020B | ARSENIC | 7.72 | mg/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW6020B | CADMIUM | 0.23 | mg/kg | D J | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW6020B | COPPER | 98.9 | mg/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW6020B | LEAD | 32.7 | mg/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW6020B | ZINC | 247 | mg/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW7471B | MERCURY | 0.182 | mg/kg | | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 55.1 | ug/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 153 | ug/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 130 | ug/kg | D | | | ✓ |
| SIB-SC-F17-1-2-08062022 | 22H0290-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW6020B | ARSENIC | 6.81 | mg/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW6020B | COPPER | 143 | mg/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW6020B | LEAD | 193 | mg/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW6020B | ZINC | 317 | mg/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW7471B | MERCURY | 0.354 | mg/kg | | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 154 | ug/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 245 | ug/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 287 | ug/kg | D | | | ✓ |
| SIB-SC-F17-2-3-08062022 | 22H0290-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW6020B | ARSENIC | 9.69 | mg/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW6020B | COPPER | 420 | mg/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW6020B | LEAD | 326 | mg/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW6020B | ZINC | 500 | mg/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW7471B | MERCURY | 0.322 | mg/kg | | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1248 (AROCLOR 1248) | 104 | ug/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1254 (AROCLOR 1254) | 228 | ug/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1260 (AROCLOR 1260) | 193 | ug/kg | D | | | ✓ |
| SIB-SC-F17-3-4-08062022 | 22H0290-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW6020B | ARSENIC | 3.84 | mg/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW6020B | COPPER | 51.5 | mg/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW6020B | LEAD | 71 | mg/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW6020B | ZINC | 193 | mg/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW7471B | MERCURY | 0.154 | mg/kg | | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1248 (AROCLOR 1248) | 96.8 | ug/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1254 (AROCLOR 1254) | 194 | ug/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1260 (AROCLOR 1260) | 94.4 | ug/kg | D | | | ✓ |
| SIB-SC-F17-4-5-08062022 | 22H0290-10 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW6020B | ARSENIC | 2.91 | mg/kg | D | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW6020B | COPPER | 30.9 | mg/kg | D | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW6020B | LEAD | 7.93 | mg/kg | D | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW6020B | ZINC | 63.7 | mg/kg | D | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW7471B | MERCURY | 0.0464 | mg/kg | | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.2 | ug/kg | | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.2 | ug/kg | | | | ✓ |
| SIB-SC-F17-5-6-08062022 | 22H0290-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW6020B | ARSENIC | 5.43 | mg/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW6020B | COPPER | 64.4 | mg/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW6020B | LEAD | 35.4 | mg/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW6020B | ZINC | 178 | mg/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW7471B | MERCURY | 0.4 | mg/kg | | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1248 (AROCLOR 1248) | 60 | ug/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 134 | ug/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-E07-1-2-08062022 | 22H0290-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW6020B | ARSENIC | 5.65 | mg/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW6020B | COPPER | 74.9 | mg/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW6020B | LEAD | 52.1 | mg/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW6020B | ZINC | 250 | mg/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW7471B | MERCURY | 0.433 | mg/kg | | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 78.5 | ug/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 112 | ug/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-E07-2-3-08062022 | 22H0290-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW6020B | ARSENIC | 5.72 | mg/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW6020B | COPPER | 64.7 | mg/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW6020B | LEAD | 41.8 | mg/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW6020B | ZINC | 204 | mg/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW7471B | MERCURY | 0.456 | mg/kg | | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 53.6 | ug/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-E07-3-4-08062022 | 22H0290-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW6020B | ARSENIC | 4.85 | mg/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW6020B | CADMIUM | 0.41 | mg/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW6020B | COPPER | 47.2 | mg/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW6020B | LEAD | 28.8 | mg/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW6020B | ZINC | 144 | mg/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW7471B | MERCURY | 0.426 | mg/kg | | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 60 | ug/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 80.1 | ug/kg | D | | | ✓ |
| SIB-SC-E07-4-5-08062022 | 22H0290-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW6020B | ARSENIC | 5.27 | mg/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW6020B | COPPER | 53.1 | mg/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW6020B | LEAD | 31 | mg/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW6020B | ZINC | 162 | mg/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW7471B | MERCURY | 0.407 | mg/kg | | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 25.2 | ug/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 61.8 | ug/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 92 | ug/kg | D | | | ✓ |
| SIB-SC-E07-5-6-08062022 | 22H0290-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0290 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The DV report indicated that EB06-08042022 (results reported in SDG 22H0215) was free from contamination. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required.

The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %R discrepancy for sample SIB-SC-F17-2-3-08/06/2022 was >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F17-2-3-08/06/2022 | Aroclor 1248 | 154 | -- | J | J | SSH |
| | Aroclor 1254 | 245 | -- | J | J | SSH |
| | Aroclor 1260 | 287 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0298

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0298 | SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SE | ✓ | ✓ | ✓ |
| 22H0298 | FD-28-08/08/2022 | 22H0298-03 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E06-2-3-08082022 | 22H0298-04 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E06-3-4-08082022 | 22H0298-05 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E06-4-5-08082022 | 22H0298-06 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E06-5-6-08082022 | 22H0298-07 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E05-1-2-08082022 | 22H0298-18 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E05-2-3-08082022 | 22H0298-19 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E05-3-4-08082022 | 22H0298-20 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E05-4-5-08082022 | 22H0298-21 | SE | ✓ | ✓ | ✓ |
| 22H0298 | SIB-SC-E05-5-6-08082022 | 22H0298-22 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0298 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB07-08092022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates, SIB-SC-E06-1-2-08/08/2022 & FD-28-08/08/2022, were submitted. Field precision was acceptable.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD, MS/MSD and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0298 | 1 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB07-08092022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

For Batch BKK0032, MS/MSD samples were analyzed using Sample SIB-SC-E06-4-5-08/08/2022. Mercury MS/MSD %R values were less than the control limit; all sample results in this batch were estimated (J-MSL).

Laboratory Duplicates

One sample from each laboratory batch was extracted and analyzed in duplicate. Relative percent difference (RPD) values were calculated for detected analytes where results are greater than five times the method detection limit (MDL). With the exceptions noted below, RPD values were less than the 20% control limit.

For Sample, SIB-SC-E06-4-5-08/08/2022, the RPD values for lead, arsenic, copper, and zinc were greater than the control limit. Results for these analytes were estimated (J-LDPR) for all samples.

Field Duplicates

Samples SIB-SC-E06-1-2-08/08/2066 and FD-28-08/08/2022 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD accuracy and laboratory duplicate precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW6020B | ARSENIC | 4.81 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW6020B | COPPER | 80.3 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW6020B | LEAD | 57.5 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW6020B | ZINC | 255 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW7471B | MERCURY | 0.388 | mg/kg | | J | MSL | |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 88.4 | ug/kg | D | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 222 | ug/kg | D | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 158 | ug/kg | D | | | ✓ |
| SIB-SC-E06-1-2-08/08/2066 | 22H0298-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW6020B | ARSENIC | 4.11 | mg/kg | D | J | LDPR | |
| FD-28-08/08/2022 | 22H0298-03 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW6020B | COPPER | 59.2 | mg/kg | D | J | LDPR | |
| FD-28-08/08/2022 | 22H0298-03 | SW6020B | LEAD | 52.1 | mg/kg | D | J | LDPR | |
| FD-28-08/08/2022 | 22H0298-03 | SW6020B | ZINC | 212 | mg/kg | D | J | LDPR | |
| FD-28-08/08/2022 | 22H0298-03 | SW7471B | MERCURY | 0.376 | mg/kg | | J | MSL | |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 108 | ug/kg | D | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 284 | ug/kg | D | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 190 | ug/kg | D | | | ✓ |
| FD-28-08/08/2022 | 22H0298-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW6020B | ARSENIC | 5.18 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW6020B | COPPER | 77.2 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW6020B | LEAD | 53.1 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW6020B | ZINC | 229 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW7471B | MERCURY | 0.375 | mg/kg | | J | MSL | |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 63 | ug/kg | D | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 133 | ug/kg | D | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 138 | ug/kg | D | | | ✓ |
| SIB-SC-E06-2-3-08082022 | 22H0298-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW6020B | ARSENIC | 5.72 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW6020B | COPPER | 56.5 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW6020B | LEAD | 31.6 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW6020B | ZINC | 163 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW7471B | MERCURY | 0.395 | mg/kg | | J | MSL | |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 40.2 | ug/kg | D | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 106 | ug/kg | D | | | ✓ |
| SIB-SC-E06-3-4-08082022 | 22H0298-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW6020B | ARSENIC | 4.83 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW6020B | COPPER | 47.8 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW6020B | LEAD | 26.9 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW6020B | ZINC | 140 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW7471B | MERCURY | 0.408 | mg/kg | | J | MSL | |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 23.5 | ug/kg | D | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 63.9 | ug/kg | D | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 70.2 | ug/kg | D | | | ✓ |
| SIB-SC-E06-4-5-08082022 | 22H0298-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW6020B | ARSENIC | 4.46 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW6020B | COPPER | 43.8 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW6020B | LEAD | 20.5 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW6020B | ZINC | 120 | mg/kg | D | J | LDPR | |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW7471B | MERCURY | 0.391 | mg/kg | | J | MSL | |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 45.9 | ug/kg | D | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 52.5 | ug/kg | D | | | ✓ |
| SIB-SC-E06-5-6-08082022 | 22H0298-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW6020B | ARSENIC | 3.92 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW6020B | CADMIUM | 0.28 | mg/kg | D | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW6020B | COPPER | 50.2 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW6020B | LEAD | 26.6 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW6020B | ZINC | 127 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW7471B | MERCURY | 0.263 | mg/kg | | J | MSL | |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 30.8 | ug/kg | D | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 87.7 | ug/kg | D | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 62 | ug/kg | D | | | ✓ |
| SIB-SC-E05-1-2-08082022 | 22H0298-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW6020B | ARSENIC | 3.44 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW6020B | CADMIUM | 0.22 | mg/kg | D | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW6020B | COPPER | 41.2 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW6020B | LEAD | 22.6 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW6020B | ZINC | 120 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW7471B | MERCURY | 0.241 | mg/kg | | J | MSL | |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 31.8 | ug/kg | D | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 86.5 | ug/kg | D | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 59.3 | ug/kg | D | | | ✓ |
| SIB-SC-E05-2-3-08082022 | 22H0298-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW6020B | ARSENIC | 4.77 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW6020B | COPPER | 52.7 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW6020B | LEAD | 23.8 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW6020B | ZINC | 139 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW7471B | MERCURY | 0.382 | mg/kg | | J | MSL | |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 27.4 | ug/kg | D | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 73.5 | ug/kg | D | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 72.2 | ug/kg | D | | | ✓ |
| SIB-SC-E05-3-4-08082022 | 22H0298-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW6020B | ARSENIC | 3.77 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW6020B | COPPER | 34.9 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW6020B | LEAD | 6.9 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW6020B | ZINC | 67.7 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW7471B | MERCURY | 0.0699 | mg/kg | | J | MSL | |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 7.9 | ug/kg | | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.9 | ug/kg | | | | ✓ |
| SIB-SC-E05-4-5-08082022 | 22H0298-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW6020B | ARSENIC | 3.01 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW6020B | COPPER | 25.3 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW6020B | LEAD | 4.41 | mg/kg | D | J | LDPR | |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW6020B | ZINC | 52.9 | mg/kg | D | J | LDPR | |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW7471B | MERCURY | 0.0479 | mg/kg | | J | MSL | |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1254 (AROCOR 1254) | 5 | ug/kg | | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E05-5-6-08082022 | 22H0298-22 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0298 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

MS/MSDs: The validator correctly qualified all mercury results (detections) J due to the low MS/MSD %Rs; however, the %Rs were <30% and the reason code should be MSLX, not MSL.

Qualification Modification Table (all results in mg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|-------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| All samples | Mercury | Varies | J | J | J | MSLX |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0310

July 19, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0310 | SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SE | ✓ | ✓ | ✓ |
| 22H0310 | FD-29-08/08/2022 | 22H0310-03 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-E04-2-3-08082022 | 22H0310-04 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-E04-3-4-08082022 | 22H0310-05 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-E04-4-5-08082022 | 22H0310-06 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-E04-5-6-08082022 | 22H0310-07 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-F13-1-2-08082022 | 22H0310-17 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-F13-2-3-08082022 | 22H0310-18 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SE | ✓ | ✓ | ✓ |
| 22H0310 | FD-30-08/08/2022 | 22H0310-20 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-F13-4-5-08082022 | 22H0310-21 | SE | ✓ | ✓ | ✓ |
| 22H0310 | SIB-SC-F13-5-6-08082022 | 22H0310-22 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0310 | 12 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values of DCBP on column 1 were greater than the upper control limit. The %R values of DCBP on column 2 and TCMX on columns 1 and 2 were acceptable; no qualifiers were assigned.

- SIB-SC-F13-1-2-08/08/2022
- SIB-SC-F13-2-3-08/08/2022
- SIB-SC-F13-3-4-08/08/2022
- SIB-SC-F13-4-5-08/08/2022

Field Duplicates

Two sets of field duplicates were submitted:

SIB-SC-E04-1-2-08/08/2022 & FD-29-08/08/2022
SIB-SC-F13-3-4-08/08/2022 & FD-30-08/08/2022

Field precision was acceptable.

Reporting Limits

All samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control/laboratory control

duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD), and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0310 | 12 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For mercury Batch BKH0402,

- Sample SIB-SC-F13-2-3-08/08/2022 was used for the MS/MSD analyses. Mercury was not recovered in the MS/MSD analyses. All associated field sample results were estimated (J-MSLX) to indicate the potential very low bias.

For metals Batch BKJ0348,

- Sample SIB-SC-F13-2-3-08/08/2022) was used for the MS/MSD analyses. The %R values for zinc were greater than the upper control limit in both the MS and MSD; all associated zinc results were estimated (J-MSH). The %R values for lead and copper were greater than the control limits. The parent sample concentrations for lead and copper were greater than 4X the spike concentration; no action was taken. The RPD value for lead was greater than the control limit; the parent sample result was estimated (J-MSP).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 20%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For metals Batch BKJ0348,

- Sample SIB-SC-F13-2-3-08/08/2022 was also used for the laboratory duplicate analysis. The RPD values for cadmium, lead, and zinc were greater than the control limits; all associated cadmium, lead, and zinc results were estimated (J-LDPR).

For mercury Batch BKK0402,

- Sample SIB-SC-F13-2-3-08/08/2022 was used for the laboratory duplicate analysis. The RPD value was greater than the control limits; all associated mercury results were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two set of field duplicates were submitted:

- FD-29-08/08/2022 & SIB-SC-E04-1-2-08/08/2022. All acceptance criteria were met.
- FD-30-08/08/2022 & SIB-SC-F13-3-4-08/08/2022. The RPD values for lead and mercury were greater than the control limit. Lead and mercury results in these two samples were estimated (J-FDPR).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exceptions noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery outliers, field duplicate RPD outliers and laboratory duplicate RPD outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW6020B | ARSENIC | 6.44 | mg/kg | D | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW6020B | CADMIUM | 0.45 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW6020B | COPPER | 127 | mg/kg | D | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW6020B | LEAD | 50.4 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW6020B | ZINC | 242 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW7471B | MERCURY | 0.29 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 60.8 | ug/kg | D | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 201 | ug/kg | D | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 111 | ug/kg | D | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | 22H0310-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW6020B | ARSENIC | 6.65 | mg/kg | D | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW6020B | CADMIUM | 0.51 | mg/kg | D | J | LDPR | |
| FD-29-08/08/2022 | 22H0310-03 | SW6020B | COPPER | 130 | mg/kg | D | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW6020B | LEAD | 51 | mg/kg | D | J | LDPR | |
| FD-29-08/08/2022 | 22H0310-03 | SW6020B | ZINC | 239 | mg/kg | D | J | MSH,LDPR | |
| FD-29-08/08/2022 | 22H0310-03 | SW7471B | MERCURY | 0.265 | mg/kg | | J | MSLX,LDPR | |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 71.1 | ug/kg | D | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 245 | ug/kg | D | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 107 | ug/kg | D | | | ✓ |
| FD-29-08/08/2022 | 22H0310-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW6020B | ARSENIC | 6.14 | mg/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW6020B | COPPER | 128 | mg/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW6020B | LEAD | 66.7 | mg/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW6020B | ZINC | 271 | mg/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW7471B | MERCURY | 0.31 | mg/kg | | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1248 (AROCOLOR 1248) | 67.7 | ug/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1254 (AROCOLOR 1254) | 213 | ug/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1260 (AROCOLOR 1260) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-E04-2-3-08082022 | 22H0310-04 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW6020B | ARSENIC | 5.76 | mg/kg | D | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW6020B | CADMIUM | 0.49 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW6020B | COPPER | 104 | mg/kg | D | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW6020B | LEAD | 63.5 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW6020B | ZINC | 266 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW7471B | MERCURY | 0.348 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1248 (AROCOLOR 1248) | 95.5 | ug/kg | D | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1254 (AROCOLOR 1254) | 303 | ug/kg | D | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1260 (AROCOLOR 1260) | 198 | ug/kg | D | | | ✓ |
| SIB-SC-E04-3-4-08082022 | 22H0310-05 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW6020B | ARSENIC | 4.93 | mg/kg | D | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW6020B | CADMIUM | 0.31 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW6020B | COPPER | 71.5 | mg/kg | D | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW6020B | LEAD | 44.6 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW6020B | ZINC | 173 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW7471B | MERCURY | 0.344 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | 64 | ug/kg | D | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | 183 | ug/kg | D | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | 108 | ug/kg | D | | | ✓ |
| SIB-SC-E04-4-5-08082022 | 22H0310-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW6020B | ARSENIC | 4.74 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW6020B | CADMIUM | 0.3 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW6020B | COPPER | 59.2 | mg/kg | D | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW6020B | LEAD | 32.9 | mg/kg | D | J | LDPR | |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW6020B | ZINC | 155 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW7471B | MERCURY | 0.277 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 56.8 | ug/kg | D | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 110 | ug/kg | D | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 68.9 | ug/kg | D | | | ✓ |
| SIB-SC-E04-5-6-08082022 | 22H0310-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW6020B | ARSENIC | 8.05 | mg/kg | D | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW6020B | CADMIUM | 0.67 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW6020B | COPPER | 338 | mg/kg | D | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW6020B | LEAD | 221 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW6020B | ZINC | 454 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW7471B | MERCURY | 0.226 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 295 | ug/kg | D | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 756 | ug/kg | D | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 313 | ug/kg | D | | | ✓ |
| SIB-SC-F13-1-2-08082022 | 22H0310-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW6020B | ARSENIC | 8.56 | mg/kg | D | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW6020B | CADMIUM | 0.68 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW6020B | COPPER | 342 | mg/kg | D | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW6020B | LEAD | 241 | mg/kg | D | J | LDPR,MSP | |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW6020B | ZINC | 493 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW7471B | MERCURY | 0.816 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|----------------|------------------------------|
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 209 | ug/kg | D | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 600 | ug/kg | D | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 362 | ug/kg | D | | | ✓ |
| SIB-SC-F13-2-3-08082022 | 22H0310-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW6020B | ARSENIC | 6.55 | mg/kg | D | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW6020B | CADMIUM | 0.33 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW6020B | COPPER | 159 | mg/kg | D | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW6020B | LEAD | 240 | mg/kg | D | J | LDPR,FDPR | |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW6020B | ZINC | 361 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW7471B | MERCURY | 0.628 | mg/kg | | J | MSLX,LDPR,FDPR | |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 113 | ug/kg | D | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 354 | ug/kg | D | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 164 | ug/kg | D | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | 22H0310-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW6020B | ARSENIC | 5.7 | mg/kg | D | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW6020B | CADMIUM | 0.31 | mg/kg | D | J | LDPR | |
| FD-30-08/08/2022 | 22H0310-20 | SW6020B | COPPER | 201 | mg/kg | D | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW6020B | LEAD | 134 | mg/kg | D | J | LDPR,FDPR | |
| FD-30-08/08/2022 | 22H0310-20 | SW6020B | ZINC | 292 | mg/kg | D | J | MSH,LDPR | |
| FD-30-08/08/2022 | 22H0310-20 | SW7471B | MERCURY | 0.325 | mg/kg | | J | MSLX,LDPR,FDPR | |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 124 | ug/kg | D | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 375 | ug/kg | D | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 153 | ug/kg | D | | | ✓ |
| FD-30-08/08/2022 | 22H0310-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW6020B | ARSENIC | 4.47 | mg/kg | D | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW6020B | CADMIUM | 0.25 | mg/kg | D | J | LDPR | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW6020B | COPPER | 41.3 | mg/kg | D | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW6020B | LEAD | 90.5 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW6020B | ZINC | 164 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW7471B | MERCURY | 1.32 | mg/kg | D | J | MSLX,LDPR | |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1248 (AROCOLOR 1248) | 225 | ug/kg | D | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1254 (AROCOLOR 1254) | 752 | ug/kg | D | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1260 (AROCOLOR 1260) | 155 | ug/kg | D | | | ✓ |
| SIB-SC-F13-4-5-08082022 | 22H0310-21 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW6020B | ARSENIC | 2.91 | mg/kg | D | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | J | LDPR | |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW6020B | COPPER | 29.2 | mg/kg | D | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW6020B | LEAD | 5.96 | mg/kg | D | J | LDPR | |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW6020B | ZINC | 62.6 | mg/kg | D | J | MSH,LDPR | |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW7471B | MERCURY | 0.0612 | mg/kg | | J | MSLX,LDPR | |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-F13-5-6-08082022 | 22H0310-22 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 9.5 | pg/g | | | | ✓ |
| SIB-SC-E04-3-4-08082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 26.7 | pg/g | | | | ✓ |
| SIB-SC-E04-4-5-08082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 5.2 | pg/g | | | | ✓ |
| SIB-SC-E04-5-6-08082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 13.2 | pg/g | | | | ✓ |
| SIB-SC-E04-2-3-08082022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4 | pg/g | | | | ✓ |
| SIB-SC-E04-1-2-08/08/2022 | Calc | CALC | SUM OF AROCLORS | 391 | ug/kg | | | | ✓ |
| SIB-SC-E04-3-4-08082022 | Calc | CALC | SUM OF AROCLORS | 615 | ug/kg | | | | ✓ |
| SIB-SC-E04-4-5-08082022 | Calc | CALC | SUM OF AROCLORS | 374 | ug/kg | | | | ✓ |
| SIB-SC-F13-2-3-08082022 | Calc | CALC | SUM OF AROCLORS | 1190 | ug/kg | | | | ✓ |
| SIB-SC-F13-3-4-08/08/2022 | Calc | CALC | SUM OF AROCLORS | 650 | ug/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|--------|--------|-----------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F13-4-5-08082022 | Calc | CALC | SUM OF AROCLORS | 1150 | ug/kg | | | | ✓ |
| SIB-SC-F13-5-6-08082022 | Calc | CALC | SUM OF AROCLORS | 3.9 | ug/kg | U | | | ✓ |
| SIB-SC-F13-1-2-08082022 | Calc | CALC | SUM OF AROCLORS | 1380 | ug/kg | | | | ✓ |
| SIB-SC-E04-5-6-08082022 | Calc | CALC | SUM OF AROCLORS | 254 | ug/kg | | | | ✓ |
| SIB-SC-E04-2-3-08082022 | Calc | CALC | SUM OF AROCLORS | 425 | ug/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0310 |
| HGL Reviewer | Ken Rapuano 8/9/2023 |
| HGL Peer Review | Justin Hersh 8/21/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %R discrepancy for sample SIB-SC-F13-2-3-08/08/2022 was >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F13-2-3-08/08/2022 | Aroclor 1248 | 209 | -- | J | J | SSH |
| | Aroclor 1254 | 600 | -- | J | J | SSH |
| | Aroclor 1260 | 362 | -- | J | J | SSH |

Metals – 6020B and 7471B

MS/MSDs and Laboratory Duplicates: Two MS/MSDs and laboratory duplicates were performed in ICP-MS batch BKJ0348 and mercury batch BKK0402. The QC analyses performed using sample SIB-SC-E04-2-3-08/08/2022 met all control limits; however, multiple discrepancies were found in the QC analyses performed using sample SIB-SC-F13-2-3-08/08/2022. The validator applied qualification to all samples prepared in the affected batches except to sample SIB-SC-E04-2-3-08/08/202. The validator did not include the MSP reason code for lead except on the parent sample, however. The HGL reviewer added reason code J to the lead results for all samples where it was omitted.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|---------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E04-1-2-08/08/2022 | Lead | 50.4 | J | J | J | LDPR,MSP |
| FD-29-08/08/2022 | Lead | 51 | J | J | J | LDPR,MSP |
| SIB-SC-E04-3-4-08/08/2022 | Lead | 63.5 | J | J | J | LDPR,MSP |
| SIB-SC-E04-4-5-08/08/2022 | Lead | 44.6 | J | J | J | LDPR,MSP |
| SIB-SC-E04-5-6-08/08/2022 | Lead | 32.9 | J | J | J | LDPR,MSP |
| SIB-SC-F13-1-2-08/08/2022 | Lead | 221 | J | J | J | LDPR,MSP |
| SIB-SC-F13-3-4-08/08/2022 | Lead | 240 | J | J | J | LDPR,MSP,FDPR |
| FD-30-08/08/2022 | Lead | 134 | J | J | J | LDPR,MSP,FDPR |
| SIB-SC-F13-4-5-08/08/2022 | Lead | 90.5 | J | J | J | LDPR,MSP |
| SIB-SC-F13-5-6-08/08/2022 | Lead | 5.96 | J | J | J | LDPR,MSP |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0322

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-----------------------------|------------|--------|-----|--------|---------|
| 22H0322 | SIB-SC-F14-1-2-08082022 | 22H0322-03 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-F14-2-3-08082022 | 22H0322-04 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-F14-3-4-08082022 | 22H0322-05 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-F14-4-5-08082022 | 22H0322-06 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-F14-5-6-08082022 | 22H0322-07 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-1-2-08092022 | 22H0322-18 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-2-3-08092022 | 22H0322-19 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-3-4-08092022 | 22H0322-20 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-4-5-08092022 | 22H0322-21 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-5-6-08092022 | 22H0322-22 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-9-10-08092022 | 22H0322-26 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-10-11-08092022 | 22H0322-27 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-11-12-08092022 | 22H0322-28 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-12-13-08092022 | 22H0322-29 | SE | ✓ | ✓ | ✓ |
| 22H0322 | SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT

HGL – Swan Island Basin

PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0322 | 18 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB07-08092022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values for DCBP were greater than the upper control limit on column 1 but within control limits on column 2. The %R values for TCMX were within the control limit on both columns; no qualifiers were assigned.

- SIB-SC-F14-1-2-08/08/2022
- SIB-SC-F14-2-3-08/08/2022
- SIB-SC-F14-3-4-08/08/2022
- SIB-SC-E27-1-2-08/09/2022
- SIB-SC-E27-4-5-08/09/2022
- SIB-SC-E27-9-10-08/09/2022
- SIB-SC-E27-11-12-08/09/2022
- SIB-SC-E27-3-4-08/09/2022 MSD

Field Duplicates

No field duplicates were submitted.

Reported Results

For Sample SIB-SC-F14-1-2-08/08/2022, the concentrations from the 5x dilution for AR1254 and AR1260 exceeded the calibration range of the instrument and were E-flagged by the laboratory. These results should not be used and were qualified as do-not-report (DNR-VJ). The sample was re-analyzed at a 25x dilution. Results for AR1254 and AR1260 were reported from the 25x dilution. All other results should not be used and were qualified (DNR-VJ).

For Sample SIB-SC-F14-2-3-08/08/2022, the concentration from the 5x dilution for AR1254 exceeded the calibration range of the instrument and was E-flagged by the laboratory. The result should not be used and was qualified as do-not-report (DNR-VJ). The sample was re-analyzed at a 25x dilution.

The result for AR1254 was reported from the 25x dilution. All other results should not be used and were qualified (DNR-VJ).

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recovery values. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

Results were qualified as do-not-report to indicate which result of multiple results should be used.

Results qualified as do-not-report should not be used for any reason. All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0322 | 18 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| ✓ | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0279. EB07-08092022 was free from contamination.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries and precision was acceptable as demonstrated by the MS/MSD and laboratory duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW6020B | ARSENIC | 9.64 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW6020B | CADMIUM | 0.55 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW6020B | COPPER | 311 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW6020B | LEAD | 82.9 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW6020B | ZINC | 475 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW7471B | MERCURY | 5.93 | mg/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 464 | ug/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 1480 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 2260 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 2410 | ug/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 2010 | ug/kg | D | | | ✓ |
| SIB-SC-F14-1-2-08082022 | 22H0322-03RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW6020B | ARSENIC | 7.11 | mg/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW6020B | COPPER | 230 | mg/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW6020B | LEAD | 194 | mg/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW6020B | ZINC | 341 | mg/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW7471B | MERCURY | 0.469 | mg/kg | | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1248 (AROCLOR 1248) | 403 | ug/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 1290 | ug/kg | E D | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 988 | ug/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1254 (AROCLOR 1254) | 1910 | ug/kg | D | | | ✓ |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1260 (AROCLOR 1260) | 889 | ug/kg | D | DNR | EXC | |
| SIB-SC-F14-2-3-08082022 | 22H0322-04RE1 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW6020B | ARSENIC | 4.71 | mg/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW6020B | COPPER | 44.9 | mg/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW6020B | LEAD | 50.7 | mg/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW6020B | ZINC | 141 | mg/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW7471B | MERCURY | 0.201 | mg/kg | | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1248 (AROCLOR 1248) | 172 | ug/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1254 (AROCLOR 1254) | 580 | ug/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1260 (AROCLOR 1260) | 340 | ug/kg | D | | | ✓ |
| SIB-SC-F14-3-4-08082022 | 22H0322-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW6020B | ARSENIC | 3.6 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW6020B | COPPER | 37.2 | mg/kg | D | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW6020B | LEAD | 7.12 | mg/kg | D | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW6020B | ZINC | 71.2 | mg/kg | D | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW7471B | MERCURY | 0.0371 | mg/kg | | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1248 (AROCLOR 1248) | 16.6 | ug/kg | D J | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1254 (AROCLOR 1254) | 42.9 | ug/kg | D | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1260 (AROCLOR 1260) | 33.7 | ug/kg | D | | | ✓ |
| SIB-SC-F14-4-5-08082022 | 22H0322-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW6020B | ARSENIC | 3.15 | mg/kg | D | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW6020B | COPPER | 30.4 | mg/kg | D | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW6020B | LEAD | 5.95 | mg/kg | D | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW6020B | ZINC | 63.3 | mg/kg | D | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW7471B | MERCURY | 0.0529 | mg/kg | | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 28.6 | ug/kg | D | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 15.5 | ug/kg | D J | | | ✓ |
| SIB-SC-F14-5-6-08082022 | 22H0322-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW6020B | ARSENIC | 7.11 | mg/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW6020B | COPPER | 78.2 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW6020B | LEAD | 44.1 | mg/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW6020B | ZINC | 247 | mg/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW7471B | MERCURY | 0.216 | mg/kg | | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 42.5 | ug/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 90.4 | ug/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 84.4 | ug/kg | D | | | ✓ |
| SIB-SC-E27-1-2-08092022 | 22H0322-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW6020B | ARSENIC | 6.21 | mg/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW6020B | COPPER | 73.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW6020B | LEAD | 48.2 | mg/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW6020B | ZINC | 248 | mg/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW7471B | MERCURY | 0.248 | mg/kg | | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1248 (AROCLOR 1248) | 81.7 | ug/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1254 (AROCLOR 1254) | 141 | ug/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1260 (AROCLOR 1260) | 173 | ug/kg | D | | | ✓ |
| SIB-SC-E27-2-3-08092022 | 22H0322-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW6020B | ARSENIC | 6.07 | mg/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW6020B | COPPER | 60.3 | mg/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW6020B | LEAD | 35.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW6020B | ZINC | 231 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW7471B | MERCURY | 0.261 | mg/kg | | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1248 (AROCLOR 1248) | 70.6 | ug/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1254 (AROCLOR 1254) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1260 (AROCLOR 1260) | 161 | ug/kg | D | | | ✓ |
| SIB-SC-E27-3-4-08092022 | 22H0322-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW6020B | ARSENIC | 5.04 | mg/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW6020B | COPPER | 66.4 | mg/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW6020B | LEAD | 41.8 | mg/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW6020B | ZINC | 203 | mg/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW7471B | MERCURY | 0.247 | mg/kg | | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1248 (AROCLOR 1248) | 48.9 | ug/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1254 (AROCLOR 1254) | 129 | ug/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 124 | ug/kg | D | | | ✓ |
| SIB-SC-E27-4-5-08092022 | 22H0322-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW6020B | ARSENIC | 5.18 | mg/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW6020B | CADMIUM | 0.37 | mg/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW6020B | COPPER | 52.2 | mg/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW6020B | LEAD | 29.9 | mg/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW6020B | ZINC | 209 | mg/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW7471B | MERCURY | 0.181 | mg/kg | | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1248 (AROCLOR 1248) | 65.5 | ug/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 136 | ug/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 211 | ug/kg | D | | | ✓ |
| SIB-SC-E27-5-6-08092022 | 22H0322-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW6020B | ARSENIC | 5.41 | mg/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW6020B | COPPER | 53.9 | mg/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW6020B | LEAD | 37.4 | mg/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW6020B | ZINC | 216 | mg/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW7471B | MERCURY | 0.26 | mg/kg | | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1248 (AROCLOR 1248) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1254 (AROCLOR 1254) | 312 | ug/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1260 (AROCLOR 1260) | 258 | ug/kg | D | | | ✓ |
| SIB-SC-E27-6-7-08/09//2022 | 22H0322-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW6020B | ARSENIC | 5.69 | mg/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW6020B | COPPER | 61.8 | mg/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW6020B | LEAD | 39.8 | mg/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW6020B | ZINC | 202 | mg/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW7471B | MERCURY | 0.313 | mg/kg | | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1248 (AROCLOR 1248) | 36.5 | ug/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 70 | ug/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 98.5 | ug/kg | D | | | ✓ |
| SIB-SC-E27-7-8-08/09//2022 | 22H0322-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW6020B | ARSENIC | 5.77 | mg/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW6020B | CADMIUM | 0.44 | mg/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW6020B | COPPER | 57.9 | mg/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW6020B | LEAD | 33.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW6020B | ZINC | 200 | mg/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW7471B | MERCURY | 0.287 | mg/kg | | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1248 (AROCLOR 1248) | 30 | ug/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1254 (AROCLOR 1254) | 59.6 | ug/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1260 (AROCLOR 1260) | 85.9 | ug/kg | D | | | ✓ |
| SIB-SC-E27-8-9-08/09//2022 | 22H0322-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW6020B | ARSENIC | 5.79 | mg/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW6020B | CADMIUM | 0.53 | mg/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW6020B | COPPER | 64.7 | mg/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW6020B | LEAD | 48.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW6020B | ZINC | 199 | mg/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW7471B | MERCURY | 0.45 | mg/kg | | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1248 (AROCLOR 1248) | 34.4 | ug/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1254 (AROCLOR 1254) | 72.4 | ug/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1260 (AROCLOR 1260) | 87.2 | ug/kg | D | | | ✓ |
| SIB-SC-E27-9-10-08092022 | 22H0322-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW6020B | ARSENIC | 4.96 | mg/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW6020B | COPPER | 47.9 | mg/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW6020B | LEAD | 32.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW6020B | ZINC | 154 | mg/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW7471B | MERCURY | 0.49 | mg/kg | | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 33.4 | ug/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 133 | ug/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 268 | ug/kg | D | | | ✓ |
| SIB-SC-E27-10-11-08092022 | 22H0322-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW6020B | ARSENIC | 6.16 | mg/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW6020B | CADMIUM | 0.64 | mg/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW6020B | COPPER | 61.1 | mg/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW6020B | LEAD | 39.3 | mg/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW6020B | ZINC | 180 | mg/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW7471B | MERCURY | 0.667 | mg/kg | | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 36.1 | ug/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 106 | ug/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 240 | ug/kg | D | | | ✓ |
| SIB-SC-E27-11-12-08092022 | 22H0322-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW6020B | ARSENIC | 3.97 | mg/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW6020B | CADMIUM | 0.24 | mg/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW6020B | COPPER | 42.2 | mg/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW6020B | LEAD | 16.3 | mg/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW6020B | ZINC | 92.1 | mg/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW7471B | MERCURY | 0.183 | mg/kg | | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | CHLOROBIPHENYL | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 20.2 | ug/kg | D | | | ✓ |
| SIB-SC-E27-12-13-08092022 | 22H0322-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW6020B | ARSENIC | 3.69 | mg/kg | D | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW6020B | COPPER | 36.8 | mg/kg | D | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW6020B | LEAD | 15.3 | mg/kg | D | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW6020B | ZINC | 89.4 | mg/kg | D | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW7471B | MERCURY | 0.205 | mg/kg | | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | CHLOROBIPHENYL | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1260 (AROCLOR 1260) | 8.3 | ug/kg | | | | ✓ |
| SIB-SC-E27-13-14-08/09/2022 | 22H0322-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0322 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Senior Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %R discrepancies for samples SIB-SC-F14-1-2-08/08/2022, SIB-SC-F14-2-3-08/08/2022, SIB-SC-F14-3-4-08/08/2022, and SIB-SC-E27-11-12-08/09/2022 were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-F14-1-2-08/08/2022 (5x dilution) | Aroclor 1248 | 464 | -- | J | J | SSH |
| SIB-SC-F14-2-3-08/08/2022 (5x dilution) | Aroclor 1248 | 403 | -- | J | J | SSH |
| | Aroclor 1260 | 988 | -- | J | J | SSH |
| SIB-SC-F14-3-4-08/08/2022 | Aroclor 1248 | 172 | -- | J | J | SSH |
| | Aroclor 1254 | 580 | -- | J | J | SSH |
| | Aroclor 1260 | 340 | -- | J | J | SSH |
| SIB-SC-E27-11-12-08/09/2022 | Aroclor 1248 | 36.1 | -- | J | J | SSH |
| | Aroclor 1254 | 106 | -- | J | J | SSH |
| | Aroclor 1260 | 240 | -- | J | J | SSH |

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0331

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|----------------------------|------------|--------|-----|--------|---------|
| 22H0331 | SIB-SC-E27-14-15-08092022 | 22H0331-01 | SE | ✓ | ✓ | ✓ |
| 22H0331 | FD-31-08/09/2022 | 22H0331-02 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-1-2-08092022 | 22H0331-04 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-2-3-08092022 | 22H0331-05 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-3-4-08092022 | 22H0331-06 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-4-5-08092022 | 22H0331-07 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-5-6-08092022 | 22H0331-08 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-10-11-08092022 | 22H0331-13 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-11-12-08092022 | 22H0331-14 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-12-13-08092022 | 22H0331-15 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-13-14-08092022 | 22H0331-16 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-E22-14-15-08092022 | 22H0331-17 | SE | ✓ | ✓ | ✓ |
| 22H0331 | FD-32-08/09/2022 | 22H0331-21 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-D05-1-2-08092022 | 22H0331-23 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-D05-2-3-08092022 | 22H0331-24 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-D05-3-4-08092022 | 22H0331-25 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-D05-4-5-08092022 | 22H0331-26 | SE | ✓ | ✓ | ✓ |
| 22H0331 | SIB-SC-D05-5-6-08092022 | 22H0331-27 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0331 | 22 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | 2 | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values of DCBP on column 1 were greater than the upper control limit. The %R values of DCBP on column 2 and TCMX on columns 1 and 2 were acceptable; no qualifiers were assigned.

- SIB-SC-E22-1-2-08/09/2022
- SIB-SC-E22-2-3-08/09/2022

Field Duplicates

Two sets of field duplicates were submitted:

SIB-SC-E27-13-14-08/09/2022 & FD-31-08/09/2022. Field precision was acceptable.

SIB-SC-E22-9-10-08/09/2022 & FD-32-08/09/2022. Results were diluted below the detection limit for the field duplicate sample. Results for Aroclor 1260 were detected; no qualifiers were assigned.

Reported Results

For samples SIB-SC-D05-2-3-08/09/2022 and SIB-SC-D05-3-4-08/09/2022, results were reported at both 1X and 5X due to internal standard outliers. Aroclors associated with the outliers in the 1X dilution were qualified as do-not-report (DNR-EXC) and were reported from the 5X dilution. The other Aroclors reported in the 5X dilution were qualified as do-not-report (DNR-EXC).

Reporting Limits

Several samples were analyzed at dilutions due to internal standard outliers. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

Data were qualified as do-not-report to indicate which results should be used due to having multiple results reported by the laboratory. Data qualified as do-not-report should not be used for any reason.

All other data, as reported, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0331 | 22 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For mercury Batch BKJ0859,

- Sample SIB-SC-E22-1-2-08/09/2022) was used for the MS/MSD analyses. The MSD %R value for mercury was below the lower control limit, but was in control in the associated MS sample. All associated field sample results for mercury were estimated (J-MSL).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two set of field duplicates were submitted:

- FD-32-08/09/2022 & SIB-SC-E22-9-10-08/09/2022. All acceptance criteria were met.
- FD-31-08/09/2022 & SIB-SC-E27-13-14-08/09/2022. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. Precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW6020B | ARSENIC | 3.69 | mg/kg | D | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW6020B | CADMIUM | 0.21 | mg/kg | D | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW6020B | COPPER | 44.1 | mg/kg | D | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW6020B | LEAD | 24.7 | mg/kg | D | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW6020B | ZINC | 96.6 | mg/kg | D | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW7471B | MERCURY | 0.307 | mg/kg | | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 5.5 | ug/kg | | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 10.6 | ug/kg | | | | ✓ |
| SIB-SC-E27-14-15-08092022 | 22H0331-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW6020B | ARSENIC | 3.45 | mg/kg | D | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW6020B | CADMIUM | 0.16 | mg/kg | D | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW6020B | COPPER | 36.7 | mg/kg | D | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW6020B | LEAD | 14.3 | mg/kg | D | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW6020B | ZINC | 88 | mg/kg | D | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW7471B | MERCURY | 0.201 | mg/kg | | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 3.4 | ug/kg | J | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 7.6 | ug/kg | | | | ✓ |
| FD-31-08/09/2022 | 22H0331-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW6020B | ARSENIC | 9.93 | mg/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW6020B | CADMIUM | 0.63 | mg/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW6020B | COPPER | 187 | mg/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW6020B | LEAD | 85.4 | mg/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW6020B | ZINC | 435 | mg/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW7471B | MERCURY | 0.24 | mg/kg | | J | MSL | |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1248 (AROCOLOR 1248) | 59.2 | ug/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1254 (AROCOLOR 1254) | 128 | ug/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1260 (AROCOLOR 1260) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-E22-1-2-08092022 | 22H0331-04 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW6020B | ARSENIC | 8.61 | mg/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW6020B | COPPER | 161 | mg/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW6020B | LEAD | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW6020B | ZINC | 371 | mg/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW7471B | MERCURY | 0.294 | mg/kg | | J | MSL | |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1248 (AROCOLOR 1248) | 64.1 | ug/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1254 (AROCOLOR 1254) | 115 | ug/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1260 (AROCOLOR 1260) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-E22-2-3-08092022 | 22H0331-05 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW6020B | ARSENIC | 6.78 | mg/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW6020B | COPPER | 105 | mg/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW6020B | LEAD | 58.4 | mg/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW6020B | ZINC | 327 | mg/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW7471B | MERCURY | 0.296 | mg/kg | | J | MSL | |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | 82.2 | ug/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | 152 | ug/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | 147 | ug/kg | D | | | ✓ |
| SIB-SC-E22-3-4-08092022 | 22H0331-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW6020B | ARSENIC | 6.1 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW6020B | COPPER | 68.6 | mg/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW6020B | LEAD | 34.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW6020B | ZINC | 268 | mg/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW7471B | MERCURY | 0.187 | mg/kg | | J | MSL | |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1248 (AROCLOR 1248) | 80.7 | ug/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1254 (AROCLOR 1254) | 146 | ug/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1260 (AROCLOR 1260) | 153 | ug/kg | D | | | ✓ |
| SIB-SC-E22-4-5-08092022 | 22H0331-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW6020B | ARSENIC | 6.75 | mg/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW6020B | COPPER | 102 | mg/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW6020B | LEAD | 75.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW6020B | ZINC | 405 | mg/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW7471B | MERCURY | 0.236 | mg/kg | | J | MSL | |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1248 (AROCLOR 1248) | 186 | ug/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1254 (AROCLOR 1254) | 314 | ug/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1260 (AROCLOR 1260) | 451 | ug/kg | D | | | ✓ |
| SIB-SC-E22-5-6-08092022 | 22H0331-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW6020B | ARSENIC | 6.67 | mg/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW6020B | CADMIUM | 0.57 | mg/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW6020B | COPPER | 90.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW6020B | LEAD | 59.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW6020B | ZINC | 289 | mg/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW7471B | MERCURY | 0.378 | mg/kg | | J | MSL | |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1248 (AROCOLOR 1248) | 78 | ug/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1254 (AROCOLOR 1254) | 167 | ug/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1260 (AROCOLOR 1260) | 176 | ug/kg | D | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | 22H0331-09 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW6020B | ARSENIC | 6.05 | mg/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW6020B | COPPER | 69.5 | mg/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW6020B | LEAD | 36.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW6020B | ZINC | 208 | mg/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW7471B | MERCURY | 0.358 | mg/kg | | J | MSL | |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1248 (AROCOLOR 1248) | 32.1 | ug/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1254 (AROCOLOR 1254) | 68.9 | ug/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1260 (AROCOLOR 1260) | 106 | ug/kg | D | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | 22H0331-10 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW6020B | ARSENIC | 5.14 | mg/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW6020B | COPPER | 58.1 | mg/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW6020B | LEAD | 27.1 | mg/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW6020B | ZINC | 152 | mg/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW7471B | MERCURY | 0.247 | mg/kg | | J | MSL | |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1254 (AROCOLOR 1254) | 54.6 | ug/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1260 (AROCOLOR 1260) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | 22H0331-11 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW6020B | ARSENIC | 4.4 | mg/kg | D | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW6020B | COPPER | 43.6 | mg/kg | D | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW6020B | LEAD | 16.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW6020B | ZINC | 105 | mg/kg | D | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW7471B | MERCURY | 0.19 | mg/kg | | J | MSL | |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1248 (AROCLOR 1248) | 4.8 | ug/kg | | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 10.2 | ug/kg | | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 18.8 | ug/kg | | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | 22H0331-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW6020B | ARSENIC | 3.86 | mg/kg | D | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW6020B | CADMIUM | 0.2 | mg/kg | D | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW6020B | COPPER | 40 | mg/kg | D | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW6020B | LEAD | 13.1 | mg/kg | D | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW6020B | ZINC | 92.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW7471B | MERCURY | 0.202 | mg/kg | | J | MSL | |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1254 (AROCLOR 1254) | 8.4 | ug/kg | | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1260 (AROCLOR 1260) | 17.4 | ug/kg | | | | ✓ |
| SIB-SC-E22-10-11-08092022 | 22H0331-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW6020B | ARSENIC | 3.28 | mg/kg | D | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW6020B | COPPER | 31.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW6020B | LEAD | 13.8 | mg/kg | D | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW6020B | ZINC | 81.1 | mg/kg | D | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW7471B | MERCURY | 0.133 | mg/kg | | J | MSL | |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1254 (AROCOLOR 1254) | 7.5 | ug/kg | | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1260 (AROCOLOR 1260) | 17 | ug/kg | | | | ✓ |
| SIB-SC-E22-11-12-08092022 | 22H0331-14 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW6020B | ARSENIC | 3.08 | mg/kg | D | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW6020B | CADMIUM | 0.15 | mg/kg | D | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW6020B | COPPER | 28.7 | mg/kg | D | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW6020B | LEAD | 10.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW6020B | ZINC | 75.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW7471B | MERCURY | 0.0846 | mg/kg | | J | MSL | |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1254 (AROCOLOR 1254) | 4.5 | ug/kg | | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1260 (AROCOLOR 1260) | 9 | ug/kg | | | | ✓ |
| SIB-SC-E22-12-13-08092022 | 22H0331-15 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW6020B | ARSENIC | 2.36 | mg/kg | D | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW6020B | COPPER | 20.8 | mg/kg | D | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW6020B | LEAD | 5.07 | mg/kg | D | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW6020B | ZINC | 56.8 | mg/kg | D | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW7471B | MERCURY | 0.0402 | mg/kg | | J | MSL | |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1260 (AROCOLOR 1260) | 3.6 | ug/kg | J | | | ✓ |
| SIB-SC-E22-13-14-08092022 | 22H0331-16 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW6020B | ARSENIC | 3.15 | mg/kg | D | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW6020B | COPPER | 29.9 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW6020B | LEAD | 4 | mg/kg | D | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW6020B | ZINC | 61.9 | mg/kg | D | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW7471B | MERCURY | 0.0383 | mg/kg | | J | MSL | |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E22-14-15-08092022 | 22H0331-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW6020B | ARSENIC | 4.05 | mg/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW6020B | CADMIUM | 0.23 | mg/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW6020B | COPPER | 42.5 | mg/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW6020B | LEAD | 16.7 | mg/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW6020B | ZINC | 99.6 | mg/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW7471B | MERCURY | 0.185 | mg/kg | | J | MSL | |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1260 (AROCLOR 1260) | 20.7 | ug/kg | D | | | ✓ |
| FD-32-08/09/2022 | 22H0331-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW6020B | ARSENIC | 4.03 | mg/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW6020B | CADMIUM | 0.27 | mg/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW6020B | COPPER | 47.1 | mg/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW6020B | LEAD | 24.4 | mg/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW6020B | ZINC | 130 | mg/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW7471B | MERCURY | 0.244 | mg/kg | | J | MSL | |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1248 (AROCOLOR 1248) | 27.5 | ug/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1254 (AROCOLOR 1254) | 57.1 | ug/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1260 (AROCOLOR 1260) | 30.7 | ug/kg | D | | | ✓ |
| SIB-SC-D05-1-2-08092022 | 22H0331-23 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW6020B | ARSENIC | 6.63 | mg/kg | D | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW6020B | COPPER | 67.7 | mg/kg | D | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW6020B | LEAD | 29 | mg/kg | D | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW6020B | ZINC | 153 | mg/kg | D | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW7471B | MERCURY | 0.312 | mg/kg | | J | MSL | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | Aroclor 1262 | | ug/kg | U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | 22H0331-24RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW6020B | ARSENIC | 6.25 | mg/kg | D | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW6020B | CADMIUM | 0.38 | mg/kg | D | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW6020B | COPPER | 68 | mg/kg | D | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW6020B | LEAD | 29.5 | mg/kg | D | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW6020B | ZINC | 160 | mg/kg | D | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW7471B | MERCURY | 0.288 | mg/kg | | J | MSL | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | Aroclor 1262 | | ug/kg | U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1260 (AROCOLOR 1260) | 3.1 | ug/kg | J | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | D U | DNR | EXC | |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-3-4-08092022 | 22H0331-25RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW6020B | ARSENIC | 5.08 | mg/kg | D | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW6020B | COPPER | 59.5 | mg/kg | D | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW6020B | LEAD | 26.6 | mg/kg | D | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW6020B | ZINC | 151 | mg/kg | D | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW7471B | MERCURY | 0.301 | mg/kg | | J | MSL | |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | 22H0331-26 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW6020B | ARSENIC | 4.4 | mg/kg | D | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW6020B | CADMIUM | 0.23 | mg/kg | D | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW6020B | COPPER | 50 | mg/kg | D | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW6020B | LEAD | 20.3 | mg/kg | D | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW6020B | ZINC | 111 | mg/kg | D | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW7471B | MERCURY | 0.178 | mg/kg | | J | MSL | |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | 22H0331-27 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-D05-2-3-08092022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.2 | pg/g | | | | ✓ |
| SIB-SC-D05-4-5-08092022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.2 | pg/g | | | | ✓ |
| SIB-SC-D05-5-6-08092022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.47 | pg/g | | | | ✓ |
| SIB-SC-D05-1-2-08092022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 5.5 | pg/g | | | | ✓ |
| SIB-SC-D05-3-4-08092022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.5 | pg/g | | | | ✓ |
| SIB-SC-D05-2-3-08092022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-D05-4-5-08092022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-D05-5-6-08092022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-E22-1-2-08092022 | Calc | CALC | SUM OF AROCLORS | 333 | ug/kg | | | | ✓ |
| SIB-SC-E22-14-15-08092022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-E22-3-4-08092022 | Calc | CALC | SUM OF AROCLORS | 400 | ug/kg | | | | ✓ |
| SIB-SC-E22-4-5-08092022 | Calc | CALC | SUM OF AROCLORS | 398 | ug/kg | | | | ✓ |
| SIB-SC-E22-8-9-08/09//2022 | Calc | CALC | SUM OF AROCLORS | 195 | ug/kg | | | | ✓ |
| SIB-SC-E27-14-15-08092022 | Calc | CALC | SUM OF AROCLORS | 20.7 | ug/kg | | | | ✓ |
| SIB-SC-E22-10-11-08092022 | Calc | CALC | SUM OF AROCLORS | 30.4 | ug/kg | | | | ✓ |
| SIB-SC-E22-12-13-08092022 | Calc | CALC | SUM OF AROCLORS | 18.1 | ug/kg | | | | ✓ |
| SIB-SC-E22-6-7-08/09//2022 | Calc | CALC | SUM OF AROCLORS | 440 | ug/kg | | | | ✓ |
| SIB-SC-E22-9-10-08/09/2022 | Calc | CALC | SUM OF AROCLORS | 37.6 | ug/kg | | | | ✓ |
| SIB-SC-D05-1-2-08092022 | Calc | CALC | SUM OF AROCLORS | 134 | ug/kg | | | | ✓ |
| SIB-SC-E22-13-14-08092022 | Calc | CALC | SUM OF AROCLORS | 9 | ug/kg | | | | ✓ |
| SIB-SC-E22-7-8-08/09//2022 | Calc | CALC | SUM OF AROCLORS | 226 | ug/kg | | | | ✓ |
| SIB-SC-E22-11-12-08092022 | Calc | CALC | SUM OF AROCLORS | 29.1 | ug/kg | | | | ✓ |
| SIB-SC-D05-3-4-08092022 | Calc | CALC | SUM OF AROCLORS | 8.5 | ug/kg | | | | ✓ |
| SIB-SC-E22-2-3-08092022 | Calc | CALC | SUM OF AROCLORS | 316 | ug/kg | | | | ✓ |
| SIB-SC-E22-5-6-08092022 | Calc | CALC | SUM OF AROCLORS | 970 | ug/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0331 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Senior Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

The validation report correctly evaluated the field duplicate results but did not note that the results for sample SIB-SC-E27-13-14-08/09/2022, which is the parent sample for field duplicate FD-31-08/09/2022, is reported in SDG 22H0322.

PCBs as Aroclors – 8082A

Surrogates: Surrogate DCB had a %R above the control limits on column 1 for multiple samples; in cases where this was the only one of four surrogate %Rs that were out of control, the DV report did not assign qualifiers. This is generally acceptable under the HGL consistency memorandum; however, the %R discrepancies for samples SIB-SC-E22-1-2-08/09/2022 and SIB-SC-E22-2-3-08/09/2022 were >20% above the upper control limit and the detected results reported from the affected column should be qualified J-SSH. High surrogate %Rs for analyses performed at >5x dilution were not used to qualify results.

Result Reporting: The HGL reviewer concurs with the validator decision to apply a DNR qualifier to results associated with IS discrepancies, as noted in the narrative, if a diluted result is available with IS results in control. The reportable_result field for the results accepted from the diluted analyses should be changed from No to Yes.

Qualification Modification Table (all results in µg/kg)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|--------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E22-1-2-08/09/2022 | Aroclor 1248 | 59.2 | -- | J | J | SSH |
| | Aroclor 1254 | 128 | -- | J | J | SSH |
| | Aroclor 1260 | 127 | -- | J | J | SSH |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|--|--------------|------------------|---------------------|-----------------------------------|--------------------------------|----------------------------|
| SIB-SC-E22-2-3-08/09/2022 | Aroclor 1248 | 64.1 | -- | J | J | SSH |
| | Aroclor 1254 | 115 | -- | J | J | SSH |
| | Aroclor 1260 | 118 | -- | J | J | SSH |
| SIB-SC-D05-2-3-08/09/2022 (5x dilution) | Aroclor 1260 | 2.9 | U | Change reportable_result to "Yes" | | |
| | Aroclor 1262 | 2.9 | U | | | |
| | Aroclor 1268 | 2.9 | U | | | |
| SIB-SC-D05-3-4-08/09/2022 (5x dilution) | Aroclor 1260 | 2.9 | U | Change reportable_result to "Yes" | | |
| | Aroclor 1262 | 2.9 | U | | | |
| | Aroclor 1268 | 2.9 | U | | | |

Metals – 6020B and 7471B

No issues noted.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0332 |
| Laboratory: ARI | Date: 5/19/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (5.24.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-I04-1-2-08/09/2022 | 22H0332-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I04-2-3-08/09/2022 | 22H0332-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I04-3-4-08/09/2022 | 22H0332-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I04-4-5-08/09/2022 | 22H0332-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I04-5-6-08/09/2022 | 22H0332-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N03-1-2-08/10/2022 | 22H0332-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N03-2-3-08/10/2022 | 22H0332-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N03-3-4-08/10/2022 | 22H0332-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N03-4-5-08/10/2022 | 22H0332-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N03-5-6-08/10/2022 | 22H0332-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-1-2-08/10/2022 | 22H0332-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-2-3-08/10/2022 | 22H0332-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-3-4-08/10/2022 | 22H0332-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-4-5-08/10/2022 | 22H0332-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-5-6-08/10/2022 | 22H0332-25 | PCB Aroclors and Total Metals | Solid |
| FD-33-08/10/2022 | 22H0332-29 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F05-1-2-08/10/2022 | 22H0332-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F05-2-3-08/10/2022 | 22H0332-32 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F05-3-4-08/10/2022 | 22H0332-33 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F05-4-5-08/10/2022 | 22H0332-34 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F05-5-6-08/10/2022 | 22H0332-35 | PCB Aroclors and Total Metals | Solid |
| FD-34-08/10/2022 | 22H0332-39 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – An issue was noted with the initial and continuing calibrations were within method requirements except for ar1260icv2, which fails low on both columns, and ar1260ccv2, ccv4, ccv8 ar1260, which fails low on zb-5, passes on zb-35. Data was reported from the passing column for batch SKI0041. Samples that were bracketed by the failed ICV were re-analyzed. Both issues are outside of 2A validation's scope; no qualifications required.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – Mercury was detected at 0.0068 mg/kg in the method blank associated with preparation batch BKK0279, leading to a qualification threshold of 0.034 mg/kg. All detected mercury results are above the qualification threshold and no qualification is required.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB07-08092022 (results reported in SDG 22H0279) is associated with all sample results reported in this SDG. No Aroclors or metals were detected in this EB with the exception of chromium. Chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB and mercury preparation batch and metals preparation batches BKJ0517 (10.19.22) and BKK0280 (11.29.22); the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for surrogate decachlorobiphenyl for samples SIB-SC-I04-1-2-08/09/2022, SIB-SC-I04-3-4-08/09/2022, SIB-SC-F05-2-3-08/10/2022 and FD-34-08/10/2022. All detections in the affected samples should be qualified J-SSH.

***Qualification:* Aroclor 1248, Aroclor 1254, and Aroclor 1260 results for samples SIB-SC-I04-1-2-08/09/2022, SIB-SC-I04-3-4-08/09/2022, SIB-SC-F05-2-3-08/10/2022, and FD-34-08/10/2022 are qualified J-SSH.**

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-C22-1-2-08/10/2022 and SIB-SC-F05-3-4-08/10/2022.

- The MS and MSD performed on sample SIB-SC-C22-1-2-08/10/2022 prepared in batch BKJ0517 (10.19.22) had low %Rs for lead. As the MS/MSD performed on sample SIB-SC-F05-3-4-08/10/2022 in the same preparation batch was in control for all metals, only the lead result reported for sample SIB-SC-C22-1-2-08/10/2022 is qualified J-MSL.
- The MSD performed on sample SIB-SC-F05-3-4-08/10/2022 prepared in batch BKK0280 (11.29.22) had a high %R for zinc. As the MS/MSD performed on sample SIB-SC-C22-1-2-08/10/2022 in the same preparation batch was in control for all metals, only the zinc result reported for sample SIB-SC-F05-3-4-08/10/2022 is qualified J-MSH.

***Qualification:* The lead result for sample SIB-SC-C22-1-2-08/10/2022 is qualified J-MSL. The zinc result for sample SIB-SC-F05-3-4-08/10/2022 is qualified J-MSH.**

Field Duplicate – Sample FD-33-08/10/2022 is a field duplicate of sample SIB-SC-C22-2-3-08102022 and sample FD-34-08/10/2022 is a field duplicate of sample SIB-SC-F05-2-3-08162022. The PCB and metals/mercury results for both duplicate pairs met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed for metals and mercury using samples SIB-SC-C22-1-2-08/10/2022 and SIB-SC-F05-3-4-08/10/2022. The laboratory duplicate performed on sample SIB-SC-C22-1-2-08/10/2022 prepared in batch BKJ0517 (10.19.22) had high RPDs for lead, arsenic, and copper. As the laboratory duplicate performed on sample SIB-SC-F05-3-4-08/10/2022 in the same preparation batch was in control for all metals, only the lead and copper results reported for sample SIB-SC-C22-1-2-08/10/2022 are qualified J-LDPR; arsenic was not reported for any sample prepared in this batch.

Qualification: The lead and copper results reported for sample SIB-SC-C22-1-2-08/10/2022 are qualified J-LDPR.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Qualifier | Interpreted Qualifier | Reason Code |
|---------------------------|----------------|-----------|---------------|---------------------|-----------------------|-------------|
| SIB-SC-I04-1-2-08/09/2022 | Aroclor 1248 | 173 | - | J | J | SSH |
| | Aroclor 1254 | 565 | - | J | J | SSH |
| | Aroclor 1260 | 191 | - | J | J | SSH |
| SIB-SC-I04-2-3-08/09/2022 | None required. | | | | | |
| SIB-SC-I04-3-4-08/09/2022 | Aroclor 1248 | 231 | - | J | J | SSH |
| | Aroclor 1254 | 667 | - | J | J | SSH |
| | Aroclor 1260 | 250 | - | J | J | SSH |
| SIB-SC-I04-4-5-08/09/2022 | None required. | | | | | |
| SIB-SC-I04-5-6-08/09/2022 | None required. | | | | | |
| SIB-SC-N03-1-2-08/10/2022 | None required. | | | | | |
| SIB-SC-N03-2-3-08/10/2022 | None required. | | | | | |
| SIB-SC-N03-3-4-08/10/2022 | None required. | | | | | |
| SIB-SC-N03-4-5-08/10/2022 | None required. | | | | | |
| SIB-SC-N03-5-6-08/10/2022 | None required. | | | | | |
| SIB-SC-C22-1-2-08/10/2022 | Copper | 154 | - | J | J | LDPR,MSL |
| | Lead | 33 | - | J | J | LDPR |
| SIB-SC-C22-2-3-08/10/2022 | None required. | | | | | |
| SIB-SC-C22-3-4-08/10/2022 | None required. | | | | | |
| SIB-SC-C22-4-5-08/10/2022 | None required. | | | | | |
| SIB-SC-C22-5-6-08/10/2022 | None required. | | | | | |
| FD-33-08/10/2022 | None required. | | | | | |
| SIB-SC-F05-1-2-08/10/2022 | None required. | | | | | |
| SIB-SC-F05-2-3-08/10/2022 | Aroclor 1248 | 70 | - | J | J | SSH |
| | Aroclor 1254 | 143 | - | J | J | SSH |
| | Aroclor 1260 | 116 | - | J | J | SSH |
| SIB-SC-F05-3-4-08/10/2022 | Zinc | 137 | -- | J | J | MSH |
| SIB-SC-F05-4-5-08/10/2022 | None required. | | | | | |
| SIB-SC-F05-5-6-08/10/2022 | None required. | | | | | |
| FD-34-08/10/2022 | Aroclor 1248 | 64.9 | - | J | J | SSH |
| | Aroclor 1254 | 132 | - | J | J | SSH |
| | Aroclor 1260 | 110 | - | J | J | SSH |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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Reston, VA 20190

Prepared by:

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EcoChem Project: C28601-1

SDG: 22H0365

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0365 | SIB-SC-B10-1-2-08112022 | 22H0365-02 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B10-3-4-08112022 | 22H0365-04 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B10-4-5-08112022 | 22H0365-05 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B10-5-6-08112022 | 22H0365-06 | SE | ✓ | ✓ | ✓ |
| 22H0365 | FD-35-08/11/2022 | 22H0365-12 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B11-1-2-08112022 | 22H0365-14 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B11-3-4-08112022 | 22H0365-16 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B11-4-5-08112022 | 22H0365-17 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-B11-5-6-08112022 | 22H0365-18 | SE | ✓ | ✓ | ✓ |
| 22H0365 | FD-36-08/11/2022 | 22H0365-28 | SE | ✓ | ✓ | ✓ |
| 22H0365 | SIB-SC-F04-1-2-08112022 | 22H0365-30 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0365 | 13 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

Two sets of field duplicates were submitted:

SIB-SC-B10-2-3-08/11/2022 & FD-35-08/11/2022

SIB-SC-B11-2-3-08/11/2022 & FD-36-08/11/2022

Samples were non-detect for all target analytes. Refer to LCS/LCSD and MS/MSD for precision evaluation.

Reporting Limits

Sample SIB-SC-F04-1-2-08/11/2022 was analyzed at a 5X dilution due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0365 | 13 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB07-08092022 is associated with the samples with results reported in this SDG; results for these EB were reported in ARI SDG 22G0343. EB07-08092022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For mercury Batch BKK0477,

- Sample SIB-SC-B11-3-4-08/11/2022 was used for the MS/MSD analyses. The %R value for mercury was greater than the control limit in both the MS and MSD; all associated mercury results were estimated (J-MSH).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two set of field duplicates were submitted:

- FD-35-08/11/2022 & SIB-SC-B10-2-3-08/11/2022. All acceptance criteria were met.
- FD-36-08/11/2022 & SIB-SC-B11-2-3-08/11/2022. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. Precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW6020B | ARSENIC | 3.34 | mg/kg | D | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW6020B | COPPER | 34.8 | mg/kg | D | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW6020B | LEAD | 5.73 | mg/kg | D | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW7471B | MERCURY | 0.0306 | mg/kg | J | J | MSH | |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | 22H0365-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW6020B | ARSENIC | 2.94 | mg/kg | D | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW6020B | COPPER | 31.8 | mg/kg | D | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW6020B | LEAD | 5.47 | mg/kg | D | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW6020B | ZINC | 64.2 | mg/kg | D | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW7471B | MERCURY | 0.0144 | mg/kg | J | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | 22H0365-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW6020B | ARSENIC | 2.95 | mg/kg | D | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW6020B | COPPER | 30.2 | mg/kg | D | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW6020B | LEAD | 5.51 | mg/kg | D | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW6020B | ZINC | 64 | mg/kg | D | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW7471B | MERCURY | 0.0373 | mg/kg | | J | MSH | |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | 22H0365-04 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW6020B | ARSENIC | 2.7 | mg/kg | D | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW6020B | COPPER | 33.1 | mg/kg | D | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW6020B | LEAD | 5.39 | mg/kg | D | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW6020B | ZINC | 63.4 | mg/kg | D | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW7471B | MERCURY | 0.0428 | mg/kg | | J | MSH | |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | 22H0365-05 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW6020B | ARSENIC | 3.13 | mg/kg | D | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW6020B | COPPER | 34.6 | mg/kg | D | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW6020B | LEAD | 5.98 | mg/kg | D | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW6020B | ZINC | 68.5 | mg/kg | D | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW7471B | MERCURY | 0.0488 | mg/kg | | J | MSH | |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | 22H0365-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW6020B | ARSENIC | 3.41 | mg/kg | D | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW6020B | COPPER | 34.5 | mg/kg | D | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW6020B | LEAD | 5.83 | mg/kg | D | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| FD-35-08/11/2022 | 22H0365-12 | SW7471B | MERCURY | 0.0383 | mg/kg | | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-35-08/11/2022 | 22H0365-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW6020B | ARSENIC | 3.09 | mg/kg | D | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW6020B | COPPER | 32.9 | mg/kg | D | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW6020B | LEAD | 5.51 | mg/kg | D | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW6020B | ZINC | 65.8 | mg/kg | D | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW7471B | MERCURY | 0.0346 | mg/kg | J | J | MSH | |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | 22H0365-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW6020B | ARSENIC | 3.07 | mg/kg | D | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW6020B | COPPER | 32.3 | mg/kg | D | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW6020B | LEAD | 5.65 | mg/kg | D | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW6020B | ZINC | 91.2 | mg/kg | D | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW7471B | MERCURY | 0.0388 | mg/kg | | J | MSH | |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | 22H0365-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW6020B | ARSENIC | 3.21 | mg/kg | D | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW6020B | COPPER | 31 | mg/kg | D | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW6020B | LEAD | 5.34 | mg/kg | D | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW6020B | ZINC | 65.3 | mg/kg | D | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW7471B | MERCURY | 0.0418 | mg/kg | | J | MSH | |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | 22H0365-16 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW6020B | ARSENIC | 2.91 | mg/kg | D | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW6020B | COPPER | 32.2 | mg/kg | D | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW6020B | LEAD | 5.45 | mg/kg | D | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW6020B | ZINC | 66.2 | mg/kg | D | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW7471B | MERCURY | 0.0429 | mg/kg | | J | MSH | |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | 22H0365-17 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW6020B | ARSENIC | 2.71 | mg/kg | D | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW6020B | COPPER | 28.3 | mg/kg | D | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW6020B | LEAD | 4.81 | mg/kg | D | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW6020B | ZINC | 60.7 | mg/kg | D | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW7471B | MERCURY | 0.0408 | mg/kg | | J | MSH | |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | 22H0365-18 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW6020B | ARSENIC | 3.05 | mg/kg | D | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW6020B | COPPER | 32.8 | mg/kg | D | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW6020B | LEAD | 5.63 | mg/kg | D | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW6020B | ZINC | 67 | mg/kg | D | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW7471B | MERCURY | 0.0595 | mg/kg | | J | MSH | |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| FD-36-08/11/2022 | 22H0365-28 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW6020B | ARSENIC | 8.87 | mg/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW6020B | CADMIUM | 0.62 | mg/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW6020B | COPPER | 231 | mg/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW6020B | LEAD | 64.8 | mg/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW6020B | ZINC | 332 | mg/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW7471B | MERCURY | 0.302 | mg/kg | | J | MSH | |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1248 (AROCOLOR 1248) | 106 | ug/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1254 (AROCOLOR 1254) | 237 | ug/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1260 (AROCOLOR 1260) | 135 | ug/kg | D | | | ✓ |
| SIB-SC-F04-1-2-08112022 | 22H0365-30 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.37 | pg/g | | | | ✓ |
| SIB-SC-B10-5-6-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.19 | pg/g | | | | ✓ |
| SIB-SC-F04-1-2-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 35.5 | pg/g | | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.6 | pg/g | | | | ✓ |
| SIB-SC-B10-4-5-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.21 | pg/g | | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|--------|--------|--|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B10-1-2-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.2 | pg/g | | | | ✓ |
| SIB-SC-B10-3-4-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B10-5-6-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B11-2-3-08/11/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B11-4-5-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B11-5-6-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-F04-1-2-08112022 | Calc | CALC | SUM OF AROCLORS | 497 | ug/kg | | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B11-1-2-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B10-4-5-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B10-1-2-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B11-3-4-08112022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B10-3-4-08112022 | Calc | CALC | SUM PCB CONGENERS | 780 | pg/g | | | | ✓ |
| SIB-SC-B10-5-6-08112022 | Calc | CALC | SUM PCB CONGENERS | 827 | pg/g | | | | ✓ |
| SIB-SC-F04-1-2-08112022 | Calc | CALC | SUM PCB CONGENERS | 877000 | pg/g | | | | ✓ |
| SIB-SC-B10-2-3-08/11/2022 | Calc | CALC | SUM PCB CONGENERS | 1050 | pg/g | | | | ✓ |
| SIB-SC-B10-4-5-08112022 | Calc | CALC | SUM PCB CONGENERS | 825 | pg/g | | | | ✓ |
| SIB-SC-B10-1-2-08112022 | Calc | CALC | SUM PCB CONGENERS | 1100 | pg/g | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0365 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Senior Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

MS/MSDs and Laboratory Duplicates: Two MS/MSDs and laboratory duplicates were performed in mercury batch BKK0477. The QC analyses performed using sample SIB-SC-B10-2-3-08/11/2022 met all control limits; however, the MS and MSD performed using sample SIB-SC-B11-3-4-08/11/2022 had high %Rs. The validator applied qualification to all samples prepared in the affected batch except to sample SIB-SC-B10-2-3-08/11/2022 and its associated field duplicate.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0367

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0367 | SIB-SC-F04-2-3-08112022 | 22H0367-01 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F04-3-4-08112022 | 22H0367-02 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F04-4-5-08112022 | 22H0367-03 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F04-5-6-08112022 | 22H0367-04 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F06-1-2-08162022 | 22H0367-15 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F06-3-4-08162022 | 22H0367-17 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F06-4-5-08162022 | 22H0367-18 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-F06-5-6-08162022 | 22H0367-19 | SE | ✓ | ✓ | ✓ |
| 22H0367 | FD-38-08/16/2022 | 22H0367-28 | SE | ✓ | ✓ | ✓ |
| 22H0367 | SIB-SC-G04-1-2-08162022 | 22H0367-30 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0367 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB07-08092022 and EB08-08212022 are associated with the samples with results reported in this SDG; results for these EBs were reported in ARI SDG 22H0279 and 22H0491. EB07-08092022 and EB08-08212022 were free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the following samples, the %R values of DCBP on column 1 were greater than the upper control limit. The %R values of DCBP on column 2 and TCMX on columns 1 and 2 were acceptable; no qualifiers were assigned.

- SIB-SC-F04-2-3-08/11/2022
- SIB-SC-F06-3-4-08/16/2022 MS

Field Duplicates

One set of field duplicates were submitted:

SIB-SC-F06-2-3-08/16/2022 & FD-38-08/16/2022.

Field precision was acceptable.

Reporting Limits

All samples were analyzed at 5X dilutions due to the high concentration of some target analytes and the nature of the sample matrix. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0367 | 11 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | 2 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blanks EB07-08092022 and EB08-08212022 are associated with the samples with results reported in this SDG; results for these EBs were reported in ARI SDG 22H0279 and 22H0491. EB07-08092022 and EB08-08212022 were free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For the mercury analyses, Sample SIB-SC-F06-3-4-08/16/2022 was analyzed as the matrix spike. The mercury recovery in the MS sample was extremely low and the associated MSD sample recovery was less than the lower control limit. The RPD value for mercury was greater than the control limit. All associated sample results were estimated (J-MSLX,MSL,MSP).

Laboratory Duplicates

For results greater than five times (5x) the reporting limit (RL), the relative percent difference (RPD) control limit is 20%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

For metals Batch BKK0099,

- Sample SIB-SC-F06-3-4-08/16/2022 was used for the laboratory duplicate analysis. The RPD for lead was greater than the control limit; all associated lead results were estimated (J-LDPR).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

- FD-38-08162022 & SIB-SC-F06-2-3-08162022. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exceptions noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery outliers and a laboratory duplicate RPD outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

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| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW6020B | ARSENIC | 6.41 | mg/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW6020B | CADMIUM | 0.6 | mg/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW6020B | COPPER | 158 | mg/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW6020B | LEAD | 74 | mg/kg | D | J | LDPR | |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW6020B | ZINC | 286 | mg/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW7471B | MERCURY | 0.462 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 73.8 | ug/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 237 | ug/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 177 | ug/kg | D | | | ✓ |
| SIB-SC-F04-2-3-08112022 | 22H0367-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW6020B | ARSENIC | 5.52 | mg/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW6020B | COPPER | 109 | mg/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW6020B | LEAD | 67.1 | mg/kg | D | J | LDPR | |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW6020B | ZINC | 263 | mg/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW7471B | MERCURY | 0.449 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 166 | ug/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 352 | ug/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 284 | ug/kg | D | | | ✓ |
| SIB-SC-F04-3-4-08112022 | 22H0367-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW6020B | ARSENIC | 5.72 | mg/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW6020B | COPPER | 72.8 | mg/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW6020B | LEAD | 38.3 | mg/kg | D | J | LDPR | |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW6020B | ZINC | 167 | mg/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW7471B | MERCURY | 0.552 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 58.5 | ug/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 126 | ug/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 131 | ug/kg | D | | | ✓ |
| SIB-SC-F04-4-5-08112022 | 22H0367-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW6020B | ARSENIC | 3.69 | mg/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW6020B | COPPER | 44.3 | mg/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW6020B | LEAD | 13.2 | mg/kg | D | J | LDPR | |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW6020B | ZINC | 89.1 | mg/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW7471B | MERCURY | 0.137 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 31.1 | ug/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 28.7 | ug/kg | D | | | ✓ |
| SIB-SC-F04-5-6-08112022 | 22H0367-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW6020B | ARSENIC | 5.47 | mg/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW6020B | CADMIUM | 0.42 | mg/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW6020B | COPPER | 97.1 | mg/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW6020B | LEAD | 163 | mg/kg | D | J | LDPR | |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW6020B | ZINC | 267 | mg/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW7471B | MERCURY | 0.499 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1248 (AROCLOR 1248) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 239 | ug/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 184 | ug/kg | D | | | ✓ |
| SIB-SC-F06-1-2-08162022 | 22H0367-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW6020B | ARSENIC | 4.62 | mg/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW6020B | CADMIUM | 0.35 | mg/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW6020B | COPPER | 68.3 | mg/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW6020B | LEAD | 47.7 | mg/kg | D | J | LDPR | |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW6020B | ZINC | 200 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW7471B | MERCURY | 0.547 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1248 (AROCLOR 1248) | 76.8 | ug/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 132 | ug/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 134 | ug/kg | D | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | 22H0367-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW6020B | ARSENIC | 5.24 | mg/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW6020B | COPPER | 56.8 | mg/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW6020B | LEAD | 28.6 | mg/kg | D | J | LDPR | |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW6020B | ZINC | 147 | mg/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW7471B | MERCURY | 0.431 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 32.8 | ug/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 63.7 | ug/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 84.7 | ug/kg | D | | | ✓ |
| SIB-SC-F06-3-4-08162022 | 22H0367-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW6020B | ARSENIC | 3.58 | mg/kg | D | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW6020B | COPPER | 39.8 | mg/kg | D | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW6020B | LEAD | 11.4 | mg/kg | D | J | LDPR | |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW6020B | ZINC | 86.1 | mg/kg | D | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW7471B | MERCURY | 0.121 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 29.9 | ug/kg | D | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 19.7 | ug/kg | D J | | | ✓ |
| SIB-SC-F06-4-5-08162022 | 22H0367-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|--------------|------------------------------------|
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW6020B | ARSENIC | 3.31 | mg/kg | D | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW6020B | COPPER | 36 | mg/kg | D | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW6020B | LEAD | 5.62 | mg/kg | D | J | LDPR | |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW6020B | ZINC | 66 | mg/kg | D | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW7471B | MERCURY | 0.0805 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-F06-5-6-08162022 | 22H0367-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW6020B | ARSENIC | 5.52 | mg/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW6020B | COPPER | 88.1 | mg/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW6020B | LEAD | 74.5 | mg/kg | D | J | LDPR | |
| FD-38-08/16/2022 | 22H0367-28 | SW6020B | ZINC | 259 | mg/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW7471B | MERCURY | 0.528 | mg/kg | | J | MSLX,MSL,MSP | |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1248 (AROCLOR 1248) | 78.6 | ug/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1254 (AROCLOR 1254) | 138 | ug/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1260 (AROCLOR 1260) | 129 | ug/kg | D | | | ✓ |
| FD-38-08/16/2022 | 22H0367-28 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW6020B | ARSENIC | 5.75 | mg/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW6020B | CADMIUM | 0.46 | mg/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW6020B | COPPER | 86.2 | mg/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW6020B | LEAD | 47.8 | mg/kg | D | J | LDPR | |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW6020B | ZINC | 229 | mg/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW7471B | MERCURY | 0.605 | mg/kg | | J | MSLX,MSL,MSP | |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--|---------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1248 (AROCLOR 1248) | 63.5 | ug/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1254 (AROCLOR 1254) | 106 | ug/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-G04-1-2-08162022 | 22H0367-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 23 | pg/g | | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 15.4 | pg/g | | | | ✓ |
| SIB-SC-F06-4-5-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.2 | pg/g | | | | ✓ |
| SIB-SC-G04-1-2-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 11.1 | pg/g | | | | ✓ |
| SIB-SC-F04-2-3-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 21.4 | pg/g | | | | ✓ |
| SIB-SC-F04-5-6-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 7.4 | pg/g | | | | ✓ |
| SIB-SC-F06-1-2-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 26 | pg/g | | | | ✓ |
| SIB-SC-F04-3-4-08112022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 7.1 | pg/g | | | | ✓ |
| SIB-SC-F06-3-4-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 18 | pg/g | | | | ✓ |
| SIB-SC-F06-5-6-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.3 | pg/g | | | | ✓ |
| SIB-SC-F04-4-5-08112022 | Calc | CALC | SUM OF AROCLORS | 334 | ug/kg | | | | ✓ |
| SIB-SC-F06-2-3-08/16/2022 | Calc | CALC | SUM OF AROCLORS | 361 | ug/kg | | | | ✓ |
| SIB-SC-F06-4-5-08162022 | Calc | CALC | SUM OF AROCLORS | 72 | ug/kg | | | | ✓ |
| SIB-SC-G04-1-2-08162022 | Calc | CALC | SUM OF AROCLORS | 289 | ug/kg | | | | ✓ |
| SIB-SC-F04-2-3-08112022 | Calc | CALC | SUM OF AROCLORS | 506 | ug/kg | | | | ✓ |
| SIB-SC-F04-5-6-08112022 | Calc | CALC | SUM OF AROCLORS | 82.2 | ug/kg | | | | ✓ |
| SIB-SC-F06-1-2-08162022 | Calc | CALC | SUM OF AROCLORS | 569 | ug/kg | | | | ✓ |
| SIB-SC-F04-3-4-08112022 | Calc | CALC | SUM OF AROCLORS | 821 | ug/kg | | | | ✓ |
| SIB-SC-F06-3-4-08162022 | Calc | CALC | SUM OF AROCLORS | 200 | ug/kg | | | | ✓ |
| SIB-SC-F06-5-6-08162022 | Calc | CALC | SUM OF AROCLORS | 3.9 | ug/kg | U | | | ✓ |
| SIB-SC-F04-4-5-08112022 | Calc | CALC | SUM PCB CONGENERS | 380000 | pg/g | | | | ✓ |
| SIB-SC-G04-1-2-08162022 | Calc | CALC | SUM PCB CONGENERS | 359000 | pg/g | | | | ✓ |
| SIB-SC-F04-2-3-08112022 | Calc | CALC | SUM PCB CONGENERS | 1060000 | pg/g | | | | ✓ |
| SIB-SC-F04-5-6-08112022 | Calc | CALC | SUM PCB CONGENERS | 44400 | pg/g | | | | ✓ |
| SIB-SC-F04-3-4-08112022 | Calc | CALC | SUM PCB CONGENERS | 1170000 | pg/g | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0367 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Senior Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

No issues noted.



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0376

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0376 | SIB-SC-G04-2-3-08162022 | 22H0376-01 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-G04-3-4-08162022 | 22H0376-02 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-G04-4-5-08162022 | 22H0376-03 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SE | ✓ | ✓ | ✓ |
| 22H0376 | FD-39-08/16/2022 | 22H0376-14 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-H04-1-2-08162022 | 22H0376-16 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-H04-2-3-08162022 | 22H0376-17 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-H04-3-4-08162022 | 22H0376-18 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-H04-4-5-08162022 | 22H0376-19 | SE | ✓ | ✓ | ✓ |
| 22H0376 | SIB-SC-H04-5-6-08162022 | 22H0376-20 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0376 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB was reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

One set of field duplicates were submitted:

SIB-SC-G04-5-6-08/16/2022 & FD-39-08/16/2022.

The difference in values for Aroclor 1254 were greater than the control limit; results were estimated (J-FDPA).

Reporting Limits

Samples SIB-SC-G04-2-3-08/16/2022 and SIB-SC-G04-3-4-08/16/2022 were analyzed at 5X dilutions due to the high concentration of some target analytes and the nature of the sample matrix. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. With the exception noted above, precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

Data were estimated due to a field duplicate precision outlier.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0376 | 10 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 2 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB was reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For the mercury analyses, Sample SIB-SC-G04-4-5-08/16/2022 was analyzed as the matrix spike. The mercury recovery in the MSD sample was greater than the control limit, but was in control in the associated MS sample. All samples in this batch had detected mercury results and were estimated (J-MSH)

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

One set of field duplicates was submitted:

- FD-39-08/16/2022 & SIB-SC-G04-5-6-08/16/2022. The difference value for mercury was greater than the control limit. Mercury results in these two samples were estimated (J-FDPA).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exception noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exception noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on a MS/MSD recovery outlier and a field duplicate precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

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|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW6020B | ARSENIC | 4.85 | mg/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW6020B | COPPER | 53.3 | mg/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW6020B | LEAD | 24.8 | mg/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW6020B | ZINC | 129 | mg/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW7471B | MERCURY | 0.369 | mg/kg | | J | MSH | |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1248 (AROCOLOR 1248) | 34.3 | ug/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1254 (AROCOLOR 1254) | 71.5 | ug/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1260 (AROCOLOR 1260) | 69.4 | ug/kg | D | | | ✓ |
| SIB-SC-G04-2-3-08162022 | 22H0376-01 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW6020B | ARSENIC | 3.73 | mg/kg | D | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW6020B | COPPER | 38.7 | mg/kg | D | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW6020B | LEAD | 9.94 | mg/kg | D | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW6020B | ZINC | 81.1 | mg/kg | D | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW7471B | MERCURY | 0.0765 | mg/kg | | J | MSH | |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1254 (AROCOLOR 1254) | 25.1 | ug/kg | D | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | 22H0376-02 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW6020B | ARSENIC | 3.44 | mg/kg | D | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW6020B | COPPER | 30.5 | mg/kg | D | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW6020B | LEAD | 7.76 | mg/kg | D | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW7471B | MERCURY | 0.0486 | mg/kg | | J | MSH | |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 4 | ug/kg | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 10.1 | ug/kg | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 5.8 | ug/kg | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | 22H0376-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW6020B | ARSENIC | 3.02 | mg/kg | D | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW6020B | COPPER | 27.1 | mg/kg | D | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW6020B | LEAD | 5.74 | mg/kg | D | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW6020B | ZINC | 60.8 | mg/kg | D | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW7471B | MERCURY | 0.0477 | mg/kg | | J | MSH,FDPA | |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 3.8 | ug/kg | J | J | FPDA | |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | 22H0376-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW6020B | ARSENIC | 3.32 | mg/kg | D | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW6020B | COPPER | 29.2 | mg/kg | D | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW6020B | LEAD | 6 | mg/kg | D | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW6020B | ZINC | 66.7 | mg/kg | D | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW7471B | MERCURY | 0.463 | mg/kg | | J | MSH,FDPA | |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1248 (AROCLOR 1248) | 5.4 | ug/kg | | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 13.8 | ug/kg | | J | FPDA | |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 5.2 | ug/kg | | | | ✓ |
| FD-39-08/16/2022 | 22H0376-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW6020B | ARSENIC | 4.17 | mg/kg | D | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW6020B | COPPER | 40.2 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW6020B | LEAD | 6.29 | mg/kg | D | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW6020B | ZINC | 69.9 | mg/kg | D | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW7471B | MERCURY | 0.0474 | mg/kg | | J | MSH | |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-1-2-08162022 | 22H0376-16 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW6020B | ARSENIC | 5.02 | mg/kg | D | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW6020B | COPPER | 33 | mg/kg | D | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW6020B | LEAD | 5.62 | mg/kg | D | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW6020B | ZINC | 62 | mg/kg | D | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW7471B | MERCURY | 0.0482 | mg/kg | | J | MSH | |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | 22H0376-17 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW6020B | ARSENIC | 3.97 | mg/kg | D | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW6020B | COPPER | 35.8 | mg/kg | D | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW6020B | LEAD | 5.76 | mg/kg | D | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW6020B | ZINC | 68.3 | mg/kg | D | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW7471B | MERCURY | 0.0395 | mg/kg | | J | MSH | |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-3-4-08162022 | 22H0376-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW6020B | ARSENIC | 3.89 | mg/kg | D | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW6020B | COPPER | 37 | mg/kg | D | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW6020B | LEAD | 5.95 | mg/kg | D | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW6020B | ZINC | 71.7 | mg/kg | D | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW7471B | MERCURY | 0.0396 | mg/kg | | J | MSH | |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | 22H0376-19 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW6020B | ARSENIC | 3.85 | mg/kg | D | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW6020B | COPPER | 32.6 | mg/kg | D | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW6020B | LEAD | 5.3 | mg/kg | D | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW6020B | ZINC | 63.5 | mg/kg | D | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW7471B | MERCURY | 0.0571 | mg/kg | | J | MSH | |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | 22H0376-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-G04-2-3-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 6.1 | pg/g | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.5 | pg/g | | | | ✓ |
| SIB-SC-H04-3-4-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.47 | pg/g | | | | ✓ |
| SIB-SC-H04-4-5-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.44 | pg/g | | | | ✓ |
| SIB-SC-H04-5-6-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.48 | pg/g | | | | ✓ |
| SIB-SC-G04-3-4-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.8 | pg/g | | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|--------|--------|--|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-H04-1-2-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.53 | pg/g | | | | ✓ |
| SIB-SC-H04-2-3-08162022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.5 | pg/g | | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.86 | pg/g | | | | ✓ |
| SIB-SC-G04-2-3-08162022 | Calc | CALC | SUM OF AROCLORS | 194 | ug/kg | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | Calc | CALC | SUM OF AROCLORS | 23.7 | ug/kg | | | | ✓ |
| SIB-SC-H04-3-4-08162022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-H04-4-5-08162022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-H04-5-6-08162022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-G04-3-4-08162022 | Calc | CALC | SUM OF AROCLORS | 49 | ug/kg | | | | ✓ |
| SIB-SC-H04-1-2-08162022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-H04-2-3-08162022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | Calc | CALC | SUM OF AROCLORS | 8.7 | ug/kg | | | | ✓ |
| SIB-SC-G04-2-3-08162022 | Calc | CALC | SUM PCB CONGENERS | 227000 | pg/g | | | | ✓ |
| SIB-SC-G04-4-5-08162022 | Calc | CALC | SUM PCB CONGENERS | 17400 | pg/g | | | | ✓ |
| SIB-SC-G04-3-4-08162022 | Calc | CALC | SUM PCB CONGENERS | 83100 | pg/g | | | | ✓ |
| SIB-SC-G04-5-6-08/16/2022 | Calc | CALC | SUM PCB CONGENERS | 28700 | pg/g | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0376 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Peer Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

No issues noted.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|---|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0379 |
| Laboratory: ARI | Date: 5/22/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (10/18/23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|--------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-H03-1-2-08/18/2022 | 22H0379-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-2-3-08/18/2022 | 22H0379-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-3-4-08/18/2022 | 22H0379-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-4-5-08/18/2022 | 22H0379-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-5-6-08/18/2022 | 22H0379-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-6-7-08/18/2022* | 22H0379-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-7-8-08/18/2022* | 22H0379-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-8-9-08/18/2022* | 22H0379-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H03-9-9.8-08/18/2022* | 22H0379-09 | PCB Aroclors and Total Metals | Solid |
| FD-43-08/18/2022 | 22H0379-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-0-1-08/18/2022 | 22H0379-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-1-2-08/18/2022 | 22H0379-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-2-3-08/18/2022 | 22H0379-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-3-4-08/18/2022 | 22H0379-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-4-5-08/18/2022 | 22H0379-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-5-6-08/18/2022 | 22H0379-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-6-7-08/18/2022* | 22H0379-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-7-8-08/18/2022* | 22H0379-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-8-9-08/18/2022* | 22H0379-19 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-9-10-08/18/2022* | 22H0379-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-10-11-08/18/2022* | 22H0379-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H02-11-11.6-08/18/2022* | 22H0379-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-0-1-08/18/2022* | 22H0379-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-1-2-08/18/2022 | 22H0379-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-2-3-08/18/2022 | 22H0379-25 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-3-4-08/18/2022 | 22H0379-26 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-4-5-08/18/2022 | 22H0379-27 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-5-6-08/18/2022 | 22H0379-28 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G02-6-7-08/18/2022* | 22H0379-29 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C07-10-11-08/18/2022* | 22H0379-30 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C07-11-12-08/18/2022* | 22H0379-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C07-12-13-08/18/2022* | 22H0379-32 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C07-13-14-08/18/2022* | 22H0379-33 | PCB Aroclors and Total Metals | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|--------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-C07-14-14.7-08/18/2022* | 22H0379-34 | PCB Aroclors and Total Metals | Solid |

* Sample put on hold and analytical results are not reported in this SDG.

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. Mercury samples were frozen to extend the holding time to 180 days.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – All samples in this SDG are associated with equipment blank EB08-08/21/2022 (results reported in SDG 22H0491). The equipment blank was free from contamination and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-H03-3-4-08/18/2022. The MS showed an extremely low %R (<30%) for mercury and the MSD showed a low %R for mercury. The RPD for mercury did not meet the QAPP control limits. All mercury results from samples prepared in batch BKK0363 are detections should be qualified J, reason code MSLX, MSP.

***Qualification:* Mercury results for samples SIB-SC-H03-1-2-08/18/2022, SIB-SC-H03-2-3-08/18/2022, SIB-SC-H03-3-4-08/18/2022, SIB-SC-H03-4-5-08/18/2022, SIB-SC-H03-5-6-08/18/2022, FD-43-08/18/2022, SIB-SC-H02-0-1-08/18/2022, SIB-SC-H02-1-2-08/18/2022, SIB-SC-H02-2-3-08/18/2022, and SIB-SC-H02-3-4-08/18/2022 are qualified J, reason code MSLX, MSP.**

Field Duplicate – Field duplicate FD-43-08/18/2022 was submitted with the samples in this SDG. All

duplicate pair results met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed for metals and mercury using sample SIB-SC-H03-3-4-08/18/2022. The RPDs of the duplicate pair met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/L):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-H03-1-2-08/18/2022 | Mercury | 0.399 | - | 0.399 | J | MSLX, MSP |
| SIB-SC-H03-2-3-08/18/2022 | Mercury | 0.302 | - | 0.302 | J | MSLX, MSP |
| SIB-SC-H03-3-4-08/18/2022 | Mercury | 0.328 | - | 0.328 | J | MSLX, MSP |
| SIB-SC-H03-4-5-08/18/2022 | Mercury | 0.223 | - | 0.223 | J | MSLX, MSP |
| SIB-SC-H03-5-6-08/18/2022 | Mercury | 0.0881 | - | 0.0881 | J | MSLX, MSP |
| SIB-SC-H03-6-7-08/18/2022 | None required. | | | | | |
| SIB-SC-H03-7-8-08/18/2022 | None required. | | | | | |
| SIB-SC-H03-8-9-08/18/2022 | None required. | | | | | |
| SIB-SC-H03-9-9.8-08/18/2022 | None required. | | | | | |
| FD-43-08/18/2022 | Mercury | 0.243 | - | 0.243 | J | MSLX, MSP |
| SIB-SC-H02-0-1-08/18/2022 | Mercury | 0.359 | - | 0.359 | J | MSLX, MSP |
| SIB-SC-H02-1-2-08/18/2022 | Mercury | 0.367 | - | 0.367 | J | MSLX, MSP |
| SIB-SC-H02-2-3-08/18/2022 | Mercury | 0.215 | - | 0.215 | J | MSLX, MSP |
| SIB-SC-H02-3-4-08/18/2022 | Mercury | 0.177 | - | 0.177 | J | MSLX, MSP |
| SIB-SC-H02-4-5-08/18/2022 | Mercury | 0.394 | - | 0.394 | J | MSLX, MSP |
| SIB-SC-H02-5-6-08/18/2022 | Mercury | 0.413 | - | 0.413 | J | MSLX, MSP |
| SIB-SC-H02-6-7-08/18/2022 | None required. | | | | | |
| SIB-SC-H02-7-8-08/18/2022 | None required. | | | | | |
| SIB-SC-H02-8-9-08/18/2022 | None required. | | | | | |
| SIB-SC-H02-9-10-08/18/2022 | None required. | | | | | |
| SIB-SC-H02-10-11-08/18/2022 | None required. | | | | | |
| SIB-SC-H02-11-11.6-08/18/2022 | None required. | | | | | |
| SIB-SC-G02-0-1-08/18/2022 | None required. | | | | | |
| SIB-SC-G02-1-2-08/18/2022 | Mercury | 0.374 | - | 0.374 | J | MSLX, MSP |
| SIB-SC-G02-2-3-08/18/2022 | Mercury | 0.36 | - | 0.36 | J | MSLX, MSP |
| SIB-SC-G02-3-4-08/18/2022 | Mercury | 0.327 | - | 0.327 | J | MSLX, MSP |
| SIB-SC-G02-4-5-08/18/2022 | Mercury | 0.306 | - | 0.306 | J | MSLX, MSP |
| SIB-SC-G02-5-6-08/18/2022 | Mercury | 0.223 | - | 0.223 | J | MSLX, MSP |
| SIB-SC-G02-6-7-08/18/2022 | None required. | | | | | |
| SIB-SC-C07-10-11-08/18/2022 | None required. | | | | | |
| SIB-SC-C07-11-12-08/18/2022 | None required. | | | | | |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-C07-12-13-08/18/2022 | None required. | | | | | |
| SIB-SC-C07-13-14-08/18/2022 | None required. | | | | | |
| SIB-SC-C07-14-14.7-08/18/2022 | None required. | | | | | |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

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EcoChem Project: C28601-1

SDG: 22H0380

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Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0380 | SIB-SC-E03-1-2-08172022 | 22H0380-02 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-E03-3-4-08172022 | 22H0380-04 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-E03-4-5-08172022 | 22H0380-05 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-E03-5-6-08172022 | 22H0380-06 | SE | ✓ | ✓ | ✓ |
| 22H0380 | FD-41-08172022 | 22H0380-12 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F03-1-2-08182022 | 22H0380-14 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F03-2-3-08182022 | 22H0380-15 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F03-4-5-08182022 | 22H0380-17 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F03-5-6-08182022 | 22H0380-18 | SE | ✓ | ✓ | ✓ |
| 22H0380 | FD-42-08182022 | 22H0380-27 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F02-1-2-08182022 | 22H0380-29 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F02-2-3-08182022 | 22H0380-30 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F02-3-4-08182022 | 22H0380-31 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F02-4-5-08182022 | 22H0380-32 | SE | ✓ | ✓ | ✓ |
| 22H0380 | SIB-SC-F02-5-6-08182022 | 22H0380-33 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0380 | 17 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For the sample SIB-SC-E03-1-2-08/17/2022, the %R value of DCBP on column 1 was greater than the upper control limit. The %R values of DCBP on column 2 and TCMX on columns 1 and 2 were acceptable; no qualifiers were assigned.

Field Duplicates

Two sets of field duplicates were submitted:

SIB-SC-E03-2-3-08/17/2022 & FD-41-08/17/2022

SIB-SC-F03-3-4-08/18/2022 & FD-42-08/18/2022

Field precision was acceptable.

Reporting Limits

Several samples were analyzed at 5X dilutions due to the high concentration of some target analytes and the nature of the sample matrix. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0380 | 17 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For the mercury analyses, Samples SIB-SC-E03-3-4-08/17/2022 and SIB-SC-F03-2-3-08/18/2022 were analyzed as the matrix spike samples. The mercury recovery in the MSD sample associated with SIB-SC-F03-2-3-08/18/2022 was less than the lower control limit and the RPD value was greater than the control limit. All associated mercury results were estimated (J-MSL,MSP).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted:

FD-41-08172022 & SIB-SC-E03-2-3-08/17/2022 and FD-42-08182022 & SIB-SC-F03-3-4-08/18/2022

All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exception noted above, accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exception noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD recovery and precision outliers.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles >5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW6020B | ARSENIC | 4.98 | mg/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW6020B | CADMIUM | 0.66 | mg/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW6020B | COPPER | 102 | mg/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW6020B | LEAD | 37.5 | mg/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW6020B | ZINC | 179 | mg/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW7471B | MERCURY | 0.215 | mg/kg | | J | MSL,MSP | |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1254 (AROCOLOR 1254) | 123 | ug/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1260 (AROCOLOR 1260) | 281 | ug/kg | D | | | ✓ |
| SIB-SC-E03-1-2-08172022 | 22H0380-02 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW6020B | ARSENIC | 2.7 | mg/kg | D | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW6020B | COPPER | 24.9 | mg/kg | D | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW6020B | LEAD | 14.9 | mg/kg | D | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW6020B | ZINC | 73.4 | mg/kg | D | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW7471B | MERCURY | 0.131 | mg/kg | | J | MSL,MSP | |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1254 (AROCOLOR 1254) | 8 | ug/kg | | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1260 (AROCOLOR 1260) | 12.2 | ug/kg | | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | 22H0380-03 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW6020B | ARSENIC | 4.15 | mg/kg | D | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW6020B | CADMIUM | 0.3 | mg/kg | D | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW6020B | COPPER | 42.9 | mg/kg | D | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW6020B | LEAD | 18.7 | mg/kg | D | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW6020B | ZINC | 101 | mg/kg | D | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW7471B | MERCURY | 0.213 | mg/kg | | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | 22H0380-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW6020B | ARSENIC | 5.3 | mg/kg | D | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW6020B | CADMIUM | 0.36 | mg/kg | D | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW6020B | COPPER | 62 | mg/kg | D | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW6020B | LEAD | 28.7 | mg/kg | D | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW6020B | ZINC | 133 | mg/kg | D | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW7471B | MERCURY | 0.37 | mg/kg | | J | MSL,MSP | |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-4-5-08172022 | 22H0380-05 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW6020B | ARSENIC | 6.11 | mg/kg | D | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW6020B | COPPER | 60.8 | mg/kg | D | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW6020B | LEAD | 35.1 | mg/kg | D | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW6020B | ZINC | 144 | mg/kg | D | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW7471B | MERCURY | 0.552 | mg/kg | | J | MSL,MSP | |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | 22H0380-06 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW6020B | ARSENIC | 2.51 | mg/kg | D | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW6020B | COPPER | 22.6 | mg/kg | D | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| FD-41-08172022 | 22H0380-12 | SW6020B | LEAD | 11.2 | mg/kg | D | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW6020B | ZINC | 70.2 | mg/kg | D | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW7471B | MERCURY | 0.0909 | mg/kg | | J | MSL,MSP | |
| FD-41-08172022 | 22H0380-12 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1254 (AROCLOR 1254) | 6.4 | ug/kg | | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1260 (AROCLOR 1260) | 9.9 | ug/kg | | | | ✓ |
| FD-41-08172022 | 22H0380-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW6020B | ARSENIC | 6.95 | mg/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW6020B | CADMIUM | 0.31 | mg/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW6020B | COPPER | 122 | mg/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW6020B | LEAD | 23.9 | mg/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW6020B | ZINC | 203 | mg/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW7471B | MERCURY | 0.136 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1254 (AROCLOR 1254) | 59.3 | ug/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1260 (AROCLOR 1260) | 25.5 | ug/kg | D | | | ✓ |
| SIB-SC-F03-1-2-08182022 | 22H0380-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW6020B | ARSENIC | 7.08 | mg/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW6020B | CADMIUM | 0.32 | mg/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW6020B | COPPER | 115 | mg/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW6020B | LEAD | 24 | mg/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW6020B | ZINC | 198 | mg/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW7471B | MERCURY | 0.109 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1254 (AROCLOR 1254) | 32.5 | ug/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1260 (AROCLOR 1260) | 43.6 | ug/kg | D | | | ✓ |
| SIB-SC-F03-2-3-08182022 | 22H0380-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW6020B | ARSENIC | 8.25 | mg/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW6020B | COPPER | 207 | mg/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW6020B | LEAD | 41.6 | mg/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW6020B | ZINC | 352 | mg/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW7471B | MERCURY | 0.178 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1254 (AROCLOR 1254) | 65.4 | ug/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1260 (AROCLOR 1260) | 39.2 | ug/kg | D | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | 22H0380-16 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW6020B | ARSENIC | 12.9 | mg/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW6020B | CADMIUM | 0.65 | mg/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW6020B | COPPER | 248 | mg/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW6020B | LEAD | 64.9 | mg/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW6020B | ZINC | 437 | mg/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW7471B | MERCURY | 0.265 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1248 (AROCLOR 1248) | 49.5 | ug/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1254 (AROCLOR 1254) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1260 (AROCLOR 1260) | 86.8 | ug/kg | D | | | ✓ |
| SIB-SC-F03-4-5-08182022 | 22H0380-17 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW6020B | ARSENIC | 8.48 | mg/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW6020B | CADMIUM | 0.69 | mg/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW6020B | COPPER | 178 | mg/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW6020B | LEAD | 70.9 | mg/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW6020B | ZINC | 330 | mg/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW7471B | MERCURY | 0.294 | mg/kg | | J | MSL,MSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1248 (AROCLOR 1248) | 61.5 | ug/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1254 (AROCLOR 1254) | 191 | ug/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1260 (AROCLOR 1260) | 118 | ug/kg | D | | | ✓ |
| SIB-SC-F03-5-6-08182022 | 22H0380-18 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW6020B | ARSENIC | 7.92 | mg/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW6020B | COPPER | 191 | mg/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW6020B | LEAD | 54.7 | mg/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW6020B | ZINC | 345 | mg/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW7471B | MERCURY | 0.166 | mg/kg | | J | MSL,MSP | |
| FD-42-08182022 | 22H0380-27 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1248 (AROCLOR 1248) | 24.5 | ug/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1254 (AROCLOR 1254) | 72.6 | ug/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1260 (AROCLOR 1260) | 38.3 | ug/kg | D | | | ✓ |
| FD-42-08182022 | 22H0380-27 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW6020B | ARSENIC | 6.77 | mg/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW6020B | CADMIUM | 0.63 | mg/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW6020B | COPPER | 166 | mg/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW6020B | LEAD | 75.7 | mg/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW6020B | ZINC | 331 | mg/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW7471B | MERCURY | 0.179 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1248 (AROCLOR 1248) | 131 | ug/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1254 (AROCLOR 1254) | 266 | ug/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1260 (AROCLOR 1260) | 186 | ug/kg | D | | | ✓ |
| SIB-SC-F02-1-2-08182022 | 22H0380-29 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW6020B | ARSENIC | 5.73 | mg/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW6020B | CADMIUM | 0.43 | mg/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW6020B | COPPER | 92.2 | mg/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW6020B | LEAD | 58.7 | mg/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW6020B | ZINC | 272 | mg/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW7471B | MERCURY | 0.366 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1248 (AROCLOR 1248) | 61 | ug/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1254 (AROCLOR 1254) | 106 | ug/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1260 (AROCLOR 1260) | 83.8 | ug/kg | D | | | ✓ |
| SIB-SC-F02-2-3-08182022 | 22H0380-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW6020B | ARSENIC | 5.71 | mg/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW6020B | CADMIUM | 0.51 | mg/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW6020B | COPPER | 63.7 | mg/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW6020B | LEAD | 32.3 | mg/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW6020B | ZINC | 179 | mg/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW7471B | MERCURY | 0.424 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1248 (AROCLOR 1248) | 21.3 | ug/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1254 (AROCLOR 1254) | 66.6 | ug/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1260 (AROCLOR 1260) | 73.9 | ug/kg | D | | | ✓ |
| SIB-SC-F02-3-4-08182022 | 22H0380-31 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW6020B | ARSENIC | 7.2 | mg/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW6020B | CADMIUM | 0.63 | mg/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW6020B | COPPER | 102 | mg/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW6020B | LEAD | 66 | mg/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW6020B | ZINC | 287 | mg/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW7471B | MERCURY | 0.69 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1248 (AROCLOR 1248) | 64 | ug/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1254 (AROCLOR 1254) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1260 (AROCLOR 1260) | 107 | ug/kg | D | | | ✓ |
| SIB-SC-F02-4-5-08182022 | 22H0380-32 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW6020B | ARSENIC | 5.57 | mg/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW6020B | CADMIUM | 0.6 | mg/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW6020B | COPPER | 65.1 | mg/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW6020B | LEAD | 38.7 | mg/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW6020B | ZINC | 199 | mg/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW7471B | MERCURY | 0.524 | mg/kg | | J | MSL,MSP | |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1248 (AROCLOR 1248) | 29.7 | ug/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1254 (AROCLOR 1254) | 83.5 | ug/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1260 (AROCLOR 1260) | 101 | ug/kg | D | | | ✓ |
| SIB-SC-F02-5-6-08182022 | 22H0380-33 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-E03-3-4-08172022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 3 | pg/g | | | | ✓ |
| SIB-SC-F02-1-2-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.7 | pg/g | | | | ✓ |
| SIB-SC-F02-2-3-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 14.5 | pg/g | | | | ✓ |
| SIB-SC-F02-4-5-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 26.5 | pg/g | | | | ✓ |
| SIB-SC-F02-5-6-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 6.5 | pg/g | | | | ✓ |
| SIB-SC-F03-1-2-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.5 | pg/g | | | | ✓ |
| SIB-SC-F03-2-3-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.7 | pg/g | | | | ✓ |
| SIB-SC-F03-4-5-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 10.7 | pg/g | | | | ✓ |
| SIB-SC-F03-5-6-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 10.6 | pg/g | | | | ✓ |
| SIB-SC-E03-1-2-08172022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 16.2 | pg/g | | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 1.9 | pg/g | | | | ✓ |
| SIB-SC-E03-4-5-08172022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 3.4 | pg/g | | | | ✓ |
| SIB-SC-E03-5-6-08172022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 5.5 | pg/g | | | | ✓ |
| SIB-SC-F02-3-4-08182022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 17 | pg/g | | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 15.4 | pg/g | | | | ✓ |
| SIB-SC-E03-3-4-08172022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-F02-1-2-08182022 | Calc | CALC | SUM OF AROCLORS | 602 | ug/kg | | | | ✓ |
| SIB-SC-F02-2-3-08182022 | Calc | CALC | SUM OF AROCLORS | 269 | ug/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|--------|--------|-----------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-F02-4-5-08182022 | Calc | CALC | SUM OF AROCLORS | 307 | ug/kg | | | | ✓ |
| SIB-SC-F02-5-6-08182022 | Calc | CALC | SUM OF AROCLORS | 233 | ug/kg | | | | ✓ |
| SIB-SC-F03-1-2-08182022 | Calc | CALC | SUM OF AROCLORS | 107 | ug/kg | | | | ✓ |
| SIB-SC-F03-2-3-08182022 | Calc | CALC | SUM OF AROCLORS | 98.5 | ug/kg | | | | ✓ |
| SIB-SC-F03-4-5-08182022 | Calc | CALC | SUM OF AROCLORS | 262 | ug/kg | | | | ✓ |
| SIB-SC-F03-5-6-08182022 | Calc | CALC | SUM OF AROCLORS | 389 | ug/kg | | | | ✓ |
| SIB-SC-E03-1-2-08172022 | Calc | CALC | SUM OF AROCLORS | 426 | ug/kg | | | | ✓ |
| SIB-SC-E03-2-3-08/17/2022 | Calc | CALC | SUM OF AROCLORS | 24.8 | ug/kg | | | | ✓ |
| SIB-SC-E03-4-5-08172022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-E03-5-6-08172022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-F02-3-4-08182022 | Calc | CALC | SUM OF AROCLORS | 180 | ug/kg | | | | ✓ |
| SIB-SC-F03-3-4-08/18/2022 | Calc | CALC | SUM OF AROCLORS | 127 | ug/kg | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 2A |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22H0376 |
| HGL Reviewer | Ken Rapuano 8/10/2023 |
| HGL Peer Review | Justin Hersh 8/22/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL verified that any reason codes were entered into the dqm_remark column and all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

No issues noted.

Metals – 6020B and 7471B

MS/MSDs and Laboratory Duplicates: Two MS/MSDs and laboratory duplicates were performed in mercury batch BKK0411. The QC analyses performed using sample SIB-SC-E03-3-4-08/17/2022 met all control limits; however, the MSD performed using sample SIB-SC-F03-2-3-08/18/2022 had high %Rs and the MS/MSD had a high RPD. The validator applied qualification to all samples prepared in the affected batch except to sample SIB-SC-E03-3-4-08/17/2022. In the judgment of the HGL reviewer, the laboratory duplicate performed on sample SIB-SC-F03-2-3-08/18/2022 also fails to meet precision criteria and all mercury results (except for sample SIB-SC-E03-3-4-08/17/2022) should have reason code LDPA added to the reason codes applied by the validator.

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------|-----------------------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SC-E03-3-4-08/17/2022 | No additional qualification | | | | | |
| All other samples | Mercury | Varies | J | J | J | MSL,MSP,LDPA |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0401

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|-----------------------------|------------|--------|-----|--------|---------|
| 22H0401 | SIB-SC-C19-1-2-08192022 | 22H0401-02 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-2-3-08192022 | 22H0401-03 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-3-4-08192022 | 22H0401-04 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-4-5-08192022 | 22H0401-05 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-5-6-08192022 | 22H0401-06 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-6-7-08192022 | 22H0401-07 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-7-8-08192022 | 22H0401-08 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-8-9-08192022 | 22H0401-09 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-9-10-08192022 | 22H0401-10 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-10-11-08192022 | 22H0401-11 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-11-12-08192022 | 22H0401-12 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-13-14-08192022 | 22H0401-14 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-C19-14-15-08192022 | 22H0401-15 | SE | ✓ | ✓ | ✓ |
| 22H0401 | FD-45-08/19/2022 | 22H0401-21 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-0-1-08192022 | 22H0401-22 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-1-2-08192022 | 22H0401-23 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-2-3-08192022 | 22H0401-24 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-4-5-08192022 | 22H0401-26 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-I03-5-6-08192022 | 22H0401-27 | SE | ✓ | ✓ | ✓ |
| 22H0401 | FD-46-08192022 | 22H0401-37 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-0-1-08192022 | 22H0401-38 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-1-2-08192022 | 22H0401-39 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-2-3-08192022 | 22H0401-40 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-3-4-08192022 | 22H0401-41 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-4-5-08192022 | 22H0401-42 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-J03-5-6-08192022 | 22H0401-43 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-K01-1-2-08202022 | 22H0401-54 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-K01-2-3-08202022 | 22H0401-55 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-K01-3-4-08202022 | 22H0401-56 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-K01-4-5-08202022 | 22H0401-57 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SE | ✓ | ✓ | ✓ |
| 22H0401 | SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0401 | 34 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 2 | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | 1 | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For sample SIB-SC-K01-1-2-08/20/2022, the %R value of DCBP on column 1 was greater than the upper control limit. The %R values of DCBP on column 2 and TCMX on columns 1 and 2 were acceptable; no qualifiers were assigned.

For sample SIB-SC-C19-2-3-08/19/2022, the %R values of DCBP on both columns were greater than the upper control limit. Positive results were estimated (J-SSH).

Field Duplicates

Two sets of field duplicates were submitted:

FD-45-08/19/2022 & SIB-SC-C19-12-13-08/19/2022

FD-46-08/19/2022 & SIB-SC-I03-3-4-08/19/2022

All samples were non-detect for all target analytes. Refer to the LCS/LCSD and MS/MSD for precision evaluation.

Reporting Limits

Several samples were analyzed at 5X dilutions due to the high concentration of some target analytes and the nature of the sample matrix. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

Data were estimated due to surrogate accuracy outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0401 | 34 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| 1 | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 2 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

Mercury was detected in method blank, BKK0602, however, all associated field sample results were greater than the 5x action level; no data were qualified.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. Where analyte concentrations were less than 4x the spike amount, the percent recovery (%R) and relative percent difference (RPD) values were evaluated. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-MSL). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-MSH).

Precision is indicated by the relative percent difference (RPD) between the MS and MSD values. RPD values outside the control limits indicate uncertainty in the measured results for the sample and positive results are estimated (J-MSP).

For the mercury analyses, Samples SIB-SC-C19-11-12-08/19/2022 and SIB-SC-I03-3-4-08/19/2022 were analyzed as the matrix spike samples. For Sample SIB-SC-C19-11-12-08/19/2022, the mercury RPD value was greater than the control limit. All associated mercury results were estimated (J-MSP).

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted:

FD-45-08/19/2022 & SIB-SC-C19-12-13-08/19/2022

FD-46-08/19/2022 & SIB-SC-I03-3-4-08/19/2022

All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS/MSD and laboratory control sample recoveries. With the exception noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on a MS/MSD precision outlier.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW6020B | ARSENIC | 4.78 | mg/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW6020B | CADMIUM | 0.56 | mg/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW6020B | COPPER | 59.2 | mg/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW6020B | LEAD | 37.4 | mg/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW6020B | ZINC | 159 | mg/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW7471B | MERCURY | 0.405 | mg/kg | | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 24.9 | ug/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 63.7 | ug/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 125 | ug/kg | D | | | ✓ |
| SIB-SC-C19-1-2-08192022 | 22H0401-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW6020B | ARSENIC | 4.33 | mg/kg | D | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW6020B | CADMIUM | 0.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW6020B | COPPER | 59.1 | mg/kg | D | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW6020B | LEAD | 65.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW6020B | ZINC | 197 | mg/kg | D | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW7471B | MERCURY | 0.451 | mg/kg | | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1248 (AROCLOR 1248) | 18.4 | ug/kg | D J | J | SSH | |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 41.8 | ug/kg | D | J | SSH | |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 109 | ug/kg | D | J | SSH | |
| SIB-SC-C19-2-3-08192022 | 22H0401-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW6020B | ARSENIC | 4.01 | mg/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW6020B | COPPER | 38.6 | mg/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW6020B | LEAD | 27.4 | mg/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW6020B | ZINC | 111 | mg/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW7471B | MERCURY | 0.384 | mg/kg | | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1254 (AROCOLOR 1254) | 28.8 | ug/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1260 (AROCOLOR 1260) | 35 | ug/kg | D | | | ✓ |
| SIB-SC-C19-3-4-08192022 | 22H0401-04 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW6020B | ARSENIC | 4.74 | mg/kg | D | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW6020B | CADMIUM | 0.34 | mg/kg | D | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW6020B | COPPER | 46.5 | mg/kg | D | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW6020B | LEAD | 25.3 | mg/kg | D | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW6020B | ZINC | 140 | mg/kg | D | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW7471B | MERCURY | 0.398 | mg/kg | | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1248 (AROCOLOR 1248) | 4.3 | ug/kg | | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1254 (AROCOLOR 1254) | 9.5 | ug/kg | | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1260 (AROCOLOR 1260) | 8.7 | ug/kg | | | | ✓ |
| SIB-SC-C19-4-5-08192022 | 22H0401-05 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW6020B | ARSENIC | 3.89 | mg/kg | D | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW6020B | COPPER | 39.9 | mg/kg | D | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW6020B | LEAD | 15.1 | mg/kg | D | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW6020B | ZINC | 92.1 | mg/kg | D | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW7471B | MERCURY | 0.163 | mg/kg | B | J | MSP | |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-5-6-08192022 | 22H0401-06 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW6020B | ARSENIC | 3.05 | mg/kg | D | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW6020B | COPPER | 34.6 | mg/kg | D | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW6020B | LEAD | 8.79 | mg/kg | D | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW6020B | ZINC | 70.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW7471B | MERCURY | 0.0851 | mg/kg | B | J | MSP | |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-6-7-08192022 | 22H0401-07 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW6020B | ARSENIC | 2.43 | mg/kg | D | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW6020B | CADMIUM | 0.05 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW6020B | COPPER | 25.3 | mg/kg | D | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW6020B | LEAD | 4.57 | mg/kg | D | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW6020B | ZINC | 65.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW7471B | MERCURY | 0.0566 | mg/kg | B | J | MSP | |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | 22H0401-08 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW6020B | ARSENIC | 2.85 | mg/kg | D | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW6020B | COPPER | 32.6 | mg/kg | D | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW6020B | LEAD | 5.03 | mg/kg | D | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW6020B | ZINC | 63.5 | mg/kg | D | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW7471B | MERCURY | 0.057 | mg/kg | B | J | MSP | |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | 22H0401-09 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW6020B | ARSENIC | 3.39 | mg/kg | D | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW6020B | COPPER | 37.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW6020B | LEAD | 6.31 | mg/kg | D | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW6020B | ZINC | 88.6 | mg/kg | D | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW7471B | MERCURY | 0.119 | mg/kg | B | J | MSP | |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | 22H0401-10 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW6020B | ARSENIC | 3.57 | mg/kg | D | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW6020B | COPPER | 37.2 | mg/kg | D | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW6020B | LEAD | 6.21 | mg/kg | D | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW6020B | ZINC | 77.9 | mg/kg | D | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW7471B | MERCURY | 0.0797 | mg/kg | B | J | MSP | |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-10-11-08192022 | 22H0401-11 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW6020B | ARSENIC | 4.01 | mg/kg | D | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW6020B | COPPER | 39.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW6020B | LEAD | 6.46 | mg/kg | D | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW6020B | ZINC | 72.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW7471B | MERCURY | 0.0884 | mg/kg | B | J | MSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-----------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-11-12-08192022 | 22H0401-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW6020B | ARSENIC | 3.55 | mg/kg | D | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW6020B | COPPER | 39.3 | mg/kg | D | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW6020B | LEAD | 6.36 | mg/kg | D | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW6020B | ZINC | 78.1 | mg/kg | D | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW7471B | MERCURY | 0.0556 | mg/kg | B | J | MSP | |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW6020B | ARSENIC | 3.46 | mg/kg | D | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW6020B | COPPER | 38.5 | mg/kg | D | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW6020B | LEAD | 6.04 | mg/kg | D | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW6020B | ZINC | 73.2 | mg/kg | D | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW7471B | MERCURY | 0.0443 | mg/kg | B | J | MSP | |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | 22H0401-14 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW6020B | ARSENIC | 2.87 | mg/kg | D | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW6020B | COPPER | 34.5 | mg/kg | D | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW6020B | LEAD | 5.32 | mg/kg | D | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW6020B | ZINC | 64.7 | mg/kg | D | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW7471B | MERCURY | 0.0355 | mg/kg | B | J | MSP | |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | 22H0401-15 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW6020B | ARSENIC | 3.37 | mg/kg | D | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW6020B | COPPER | 38.3 | mg/kg | D | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW6020B | LEAD | 6.11 | mg/kg | D | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW6020B | ZINC | 76.7 | mg/kg | D | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW7471B | MERCURY | 0.051 | mg/kg | B | J | MSP | |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-45-08/19/2022 | 22H0401-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW6020B | ARSENIC | 2.83 | mg/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW6020B | COPPER | 33.9 | mg/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW6020B | LEAD | 6.49 | mg/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW6020B | ZINC | 69 | mg/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW7471B | MERCURY | 0.257 | mg/kg | B | J | MSP | |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | D U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1254 (AROCLOR 1254) | 21.7 | ug/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1260 (AROCLOR 1260) | 24.2 | ug/kg | D | | | ✓ |
| SIB-SC-I03-0-1-08192022 | 22H0401-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW6020B | ARSENIC | 2.9 | mg/kg | D | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW6020B | COPPER | 34.2 | mg/kg | D | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW6020B | LEAD | 5.21 | mg/kg | D | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW6020B | ZINC | 68.9 | mg/kg | D | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW7471B | MERCURY | 0.128 | mg/kg | B | J | MSP | |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-1-2-08192022 | 22H0401-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW6020B | ARSENIC | 3.03 | mg/kg | D | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW6020B | CADMIUM | 0.13 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW6020B | COPPER | 35.2 | mg/kg | D | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW6020B | LEAD | 6.75 | mg/kg | D | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW6020B | ZINC | 67.6 | mg/kg | D | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW7471B | MERCURY | 0.0619 | mg/kg | B | J | MSP | |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1254 (AROCLOR 1254) | 5.6 | ug/kg | | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1260 (AROCLOR 1260) | 4.9 | ug/kg | | | | ✓ |
| SIB-SC-I03-2-3-08192022 | 22H0401-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW6020B | ARSENIC | 2.88 | mg/kg | D | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW6020B | COPPER | 32.6 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW6020B | LEAD | 5.15 | mg/kg | D | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW6020B | ZINC | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | SW7471B | MERCURY | 0.0332 | mg/kg | J | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW6020B | ARSENIC | 4.24 | mg/kg | D | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW6020B | COPPER | 34.9 | mg/kg | D | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW6020B | LEAD | 5.44 | mg/kg | D | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW6020B | ZINC | 65.4 | mg/kg | D | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26 | SW7471B | MERCURY | 0.0371 | mg/kg | B | J | MSP | |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | 22H0401-26RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW6020B | ARSENIC | 2.52 | mg/kg | D | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW6020B | COPPER | 30.2 | mg/kg | D | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW6020B | LEAD | 4.93 | mg/kg | D | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW6020B | ZINC | 60 | mg/kg | D | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27 | SW7471B | MERCURY | 0.0418 | mg/kg | B | J | MSP | |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | 22H0401-27RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW6020B | ARSENIC | 2.9 | mg/kg | D | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW6020B | COPPER | 35.3 | mg/kg | D | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW6020B | LEAD | 7.48 | mg/kg | D | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW6020B | ZINC | 73 | mg/kg | D | | | ✓ |
| FD-46-08192022 | 22H0401-37 | SW7471B | MERCURY | 0.065 | mg/kg | B | J | MSP | |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| FD-46-08192022 | 22H0401-37RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW6020B | ARSENIC | 5.79 | mg/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW6020B | CADMIUM | 0.4 | mg/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW6020B | COPPER | 141 | mg/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW6020B | LEAD | 55.4 | mg/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW6020B | ZINC | 241 | mg/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38 | SW7471B | MERCURY | 0.348 | mg/kg | B | J | MSP | |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | 163 | ug/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 355 | ug/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-J03-0-1-08192022 | 22H0401-38RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW6020B | ARSENIC | 6.05 | mg/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW6020B | CADMIUM | 0.54 | mg/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW6020B | COPPER | 113 | mg/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW6020B | LEAD | 59.7 | mg/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW6020B | ZINC | 293 | mg/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39 | SW7471B | MERCURY | 0.28 | mg/kg | B | J | MSP | |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1016 (AROCCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1221 (AROCCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1232 (AROCCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1242 (AROCCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1248 (AROCCLOR 1248) | 103 | ug/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1254 (AROCCLOR 1254) | 233 | ug/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1260 (AROCCLOR 1260) | 163 | ug/kg | D | | | ✓ |
| SIB-SC-J03-1-2-08192022 | 22H0401-39RE1 | SW8082A | PCB-1268 (AROCCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW6020B | ARSENIC | 6.29 | mg/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW6020B | CADMIUM | 0.48 | mg/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW6020B | COPPER | 93 | mg/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW6020B | LEAD | 47.2 | mg/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW6020B | ZINC | 224 | mg/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40 | SW7471B | MERCURY | 0.105 | mg/kg | B | J | MSP | |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1016 (AROCCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1221 (AROCCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1232 (AROCCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1242 (AROCCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1248 (AROCCLOR 1248) | 49.3 | ug/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1254 (AROCCLOR 1254) | 111 | ug/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1260 (AROCCLOR 1260) | 96.5 | ug/kg | D | | | ✓ |
| SIB-SC-J03-2-3-08192022 | 22H0401-40RE1 | SW8082A | PCB-1268 (AROCCLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW6020B | ARSENIC | 4.15 | mg/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW6020B | CADMIUM | 0.26 | mg/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW6020B | COPPER | 45.1 | mg/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW6020B | LEAD | 21.4 | mg/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW6020B | ZINC | 108 | mg/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41 | SW7471B | MERCURY | 0.305 | mg/kg | | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1016 (AROCCLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1221 (AROCCLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1232 (AROCCLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1242 (AROCCLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1248 (AROCCLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1254 (AROCCLOR 1254) | 48.4 | ug/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1260 (AROCCLOR 1260) | 44 | ug/kg | D | | | ✓ |
| SIB-SC-J03-3-4-08192022 | 22H0401-41RE1 | SW8082A | PCB-1268 (AROCCLOR 1268) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW6020B | ARSENIC | 5.05 | mg/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW6020B | COPPER | 47.3 | mg/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW6020B | LEAD | 25.1 | mg/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW6020B | ZINC | 136 | mg/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42 | SW7471B | MERCURY | 0.304 | mg/kg | | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 35.5 | ug/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 42.8 | ug/kg | D | | | ✓ |
| SIB-SC-J03-4-5-08192022 | 22H0401-42RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW6020B | ARSENIC | 4.94 | mg/kg | D | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW6020B | COPPER | 47.8 | mg/kg | D | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW6020B | LEAD | 21.8 | mg/kg | D | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW6020B | ZINC | 131 | mg/kg | D | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43 | SW7471B | MERCURY | 0.28 | mg/kg | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | 12.4 | ug/kg | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 27.2 | ug/kg | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 26.5 | ug/kg | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | 22H0401-43RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW6020B | ARSENIC | 5.59 | mg/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW6020B | CADMIUM | 0.49 | mg/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW6020B | COPPER | 118 | mg/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW6020B | LEAD | 52.9 | mg/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW6020B | ZINC | 245 | mg/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54 | SW7471B | MERCURY | 0.301 | mg/kg | | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|---------------|---------|------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1248 (AROCOR 1248) | 127 | ug/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1254 (AROCOR 1254) | 274 | ug/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1260 (AROCOR 1260) | 174 | ug/kg | D | | | ✓ |
| SIB-SC-K01-1-2-08202022 | 22H0401-54RE1 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW6020B | ARSENIC | 6.3 | mg/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW6020B | CADMIUM | 0.5 | mg/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW6020B | COPPER | 92.2 | mg/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW6020B | LEAD | 55.6 | mg/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW6020B | ZINC | 318 | mg/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55 | SW7471B | MERCURY | 0.464 | mg/kg | | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1248 (AROCOR 1248) | 117 | ug/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1254 (AROCOR 1254) | 195 | ug/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1260 (AROCOR 1260) | 199 | ug/kg | D | | | ✓ |
| SIB-SC-K01-2-3-08202022 | 22H0401-55RE1 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW6020B | ARSENIC | 5.35 | mg/kg | D | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW6020B | CADMIUM | 0.29 | mg/kg | D | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW6020B | COPPER | 56.9 | mg/kg | D | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW6020B | LEAD | 16.7 | mg/kg | D | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW6020B | ZINC | 126 | mg/kg | D | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56 | SW7471B | MERCURY | 0.157 | mg/kg | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1248 (AROCOR 1248) | 9.4 | ug/kg | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1254 (AROCOR 1254) | 21.2 | ug/kg | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1260 (AROCOR 1260) | 18.7 | ug/kg | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | 22H0401-56RE1 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW6020B | ARSENIC | 5.27 | mg/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW6020B | CADMIUM | 0.39 | mg/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW6020B | COPPER | 62.7 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|---------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW6020B | LEAD | 29.9 | mg/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW6020B | ZINC | 212 | mg/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57 | SW7471B | MERCURY | 0.363 | mg/kg | | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | 50.2 | ug/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 73.6 | ug/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 99.7 | ug/kg | D | | | ✓ |
| SIB-SC-K01-4-5-08202022 | 22H0401-57RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW6020B | ARSENIC | 4.03 | mg/kg | D | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW6020B | COPPER | 36.7 | mg/kg | D | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW6020B | LEAD | 18 | mg/kg | D | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW6020B | ZINC | 90.1 | mg/kg | D | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58 | SW7471B | MERCURY | 0.167 | mg/kg | | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1254 (AROCOLOR 1254) | 6.2 | ug/kg | | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1260 (AROCOLOR 1260) | 7.8 | ug/kg | | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | 22H0401-58RE1 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW6020B | ARSENIC | 2.92 | mg/kg | D | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW6020B | COPPER | 32.5 | mg/kg | D | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW6020B | LEAD | 5.25 | mg/kg | D | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW6020B | ZINC | 56.7 | mg/kg | D | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | SW7471B | MERCURY | 0.0401 | mg/kg | | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-----------------------------|---------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1254 (AROCOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1260 (AROCOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60RE1 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.6 | pg/g | | | | ✓ |
| SIB-SC-I03-1-2-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.88 | pg/g | | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.5 | pg/g | | | | ✓ |
| SIB-SC-I03-4-5-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.54 | pg/g | | | | ✓ |
| SIB-SC-J03-3-4-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.2 | pg/g | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.8 | pg/g | | | | ✓ |
| SIB-SC-K01-1-2-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 4.5 | pg/g | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 2.2 | pg/g | | | | ✓ |
| SIB-SC-K01-4-5-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 22.7 | pg/g | | | | ✓ |
| SIB-SC-I03-2-3-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.78 | pg/g | | | | ✓ |
| SIB-SC-J03-0-1-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 22.2 | pg/g | | | | ✓ |
| SIB-SC-J03-1-2-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 27.3 | pg/g | | | | ✓ |
| SIB-SC-J03-2-3-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 18.5 | pg/g | | | | ✓ |
| SIB-SC-K01-5-5-7-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.75 | pg/g | | | | ✓ |
| SIB-SC-I03-5-6-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.48 | pg/g | | | | ✓ |
| SIB-SC-J03-4-5-08192022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 10.3 | pg/g | | | | ✓ |
| SIB-SC-K01-2-3-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 28.8 | pg/g | | | | ✓ |
| SIB-SC-C19-10-11-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-1-2-08192022 | Calc | CALC | SUM OF AROCLORS | 232 | ug/kg | | | | ✓ |
| SIB-SC-C19-12-13-08/19/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-14-15-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-2-3-08192022 | Calc | CALC | SUM OF AROCLORS | 188 | ug/kg | | | | ✓ |
| SIB-SC-C19-5-6-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-7-8-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-8-9-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-I03-0-1-08192022 | Calc | CALC | SUM OF AROCLORS | 68.3 | ug/kg | | | | ✓ |
| SIB-SC-I03-1-2-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-I03-4-5-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-J03-3-4-08192022 | Calc | CALC | SUM OF AROCLORS | 115 | ug/kg | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | Calc | CALC | SUM OF AROCLORS | 69.7 | ug/kg | | | | ✓ |
| SIB-SC-K01-1-2-08202022 | Calc | CALC | SUM OF AROCLORS | 594 | ug/kg | | | | ✓ |
| SIB-SC-K01-3-4-08202022 | Calc | CALC | SUM OF AROCLORS | 52.9 | ug/kg | | | | ✓ |
| SIB-SC-K01-4-5-08202022 | Calc | CALC | SUM OF AROCLORS | 242 | ug/kg | | | | ✓ |
| SIB-SC-I03-2-3-08192022 | Calc | CALC | SUM OF AROCLORS | 15.1 | ug/kg | | | | ✓ |
| SIB-SC-J03-0-1-08192022 | Calc | CALC | SUM OF AROCLORS | 664 | ug/kg | | | | ✓ |

**Qualified Data Summary Table
Swan Island Basin**

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|--------|--------|-------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-J03-1-2-08192022 | Calc | CALC | SUM OF AROCLORS | 517 | ug/kg | | | | ✓ |
| SIB-SC-C19-4-5-08192022 | Calc | CALC | SUM OF AROCLORS | 26.3 | ug/kg | | | | ✓ |
| SIB-SC-J03-2-3-08192022 | Calc | CALC | SUM OF AROCLORS | 275 | ug/kg | | | | ✓ |
| SIB-SC-C19-11-12-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-13-14-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-K01-5-5.7-08202022 | Calc | CALC | SUM OF AROCLORS | 18.4 | ug/kg | | | | ✓ |
| SIB-SC-B22-1-2-08/20/2022 | Calc | CALC | SUM OF AROCLORS | 0.75 | ug/kg | U | | | ✓ |
| SIB-SC-C19-3-4-08192022 | Calc | CALC | SUM OF AROCLORS | 86.2 | ug/kg | | | | ✓ |
| SIB-SC-C19-6-7-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-C19-9-10-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-I03-5-6-08192022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-J03-4-5-08192022 | Calc | CALC | SUM OF AROCLORS | 101 | ug/kg | | | | ✓ |
| SIB-SC-K01-2-3-08202022 | Calc | CALC | SUM OF AROCLORS | 529 | ug/kg | | | | ✓ |
| SIB-SC-I03-0-1-08192022 | Calc | CALC | SUM PCB CONGENERS | 44500 | pg/g | | | | ✓ |
| SIB-SC-I03-1-2-08192022 | Calc | CALC | SUM PCB CONGENERS | 6850 | pg/g | | | | ✓ |
| SIB-SC-I03-3-4-08/19/2022 | Calc | CALC | SUM PCB CONGENERS | 533 | pg/g | | | | ✓ |
| SIB-SC-I03-4-5-08192022 | Calc | CALC | SUM PCB CONGENERS | 407 | pg/g | | | | ✓ |
| SIB-SC-J03-3-4-08192022 | Calc | CALC | SUM PCB CONGENERS | 132000 | pg/g | | | | ✓ |
| SIB-SC-J03-5-6-08192022 | Calc | CALC | SUM PCB CONGENERS | 43400 | pg/g | | | | ✓ |
| SIB-SC-I03-2-3-08192022 | Calc | CALC | SUM PCB CONGENERS | 20200 | pg/g | | | | ✓ |
| SIB-SC-J03-0-1-08192022 | Calc | CALC | SUM PCB CONGENERS | 346000 | pg/g | | | | ✓ |
| SIB-SC-J03-1-2-08192022 | Calc | CALC | SUM PCB CONGENERS | 716000 | pg/g | | | | ✓ |
| SIB-SC-J03-2-3-08192022 | Calc | CALC | SUM PCB CONGENERS | 396000 | pg/g | | | | ✓ |
| SIB-SC-I03-5-6-08192022 | Calc | CALC | SUM PCB CONGENERS | 310 | pg/g | | | | ✓ |
| SIB-SC-J03-4-5-08192022 | Calc | CALC | SUM PCB CONGENERS | 85400 | pg/g | | | | ✓ |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0401 |
| Laboratory: ARI | Date: 8/9/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.22.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-C19-1-2-08/19/2022 | 22H0401-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-2-3-08/19/2022 | 22H0401-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-3-4-08/19/2022 | 22H0401-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-4-5-08/19/2022 | 22H0401-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-5-6-08/19/2022 | 22H0401-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-6-7-08/19/2022 | 22H0401-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-7-8-08/19/2022 | 22H0401-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-8-9-08/19/2022 | 22H0401-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-9-10-08/19/2022 | 22H0401-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-10-11-08/19/2022 | 22H0401-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-11-12-08/19/2022 | 22H0401-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-12-13-08/19/2022 | 22H0401-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-13-14-08/19/2022 | 22H0401-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C19-14-15-08/19/2022 | 22H0401-15 | PCB Aroclors and Total Metals | Solid |
| FD-45-08/19/2022 | 22H0401-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-0-1-08/19/2022 | 22H0401-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-1-2-08/19/2022 | 22H0401-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-2-3-08/19/2022 | 22H0401-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-3-4-08/19/2022 | 22H0401-25 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-4-5-08/19/2022 | 22H0401-26 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I03-5-6-08/19/2022 | 22H0401-27 | PCB Aroclors and Total Metals | Solid |
| FD-46-08/19/2022 | 22H0401-37 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-0-1-08/19/2022 | 22H0401-38 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-1-2-08/19/2022 | 22H0401-39 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-2-3-08/19/2022 | 22H0401-40 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-3-4-08/19/2022 | 22H0401-41 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-4-5-08/19/2022 | 22H0401-42 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J03-5-6-08/19/2022 | 22H0401-43 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-1-2-08/20/2022 | 22H0401-54 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-2-3-08/20/2022 | 22H0401-55 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-3-4-08/20/2022 | 22H0401-56 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-4-5-08/20/2022 | 22H0401-57 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-5-5-7-08/20/2022 | 22H0401-58 | PCB Aroclors and Total Metals | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-B22-1-2-08/20/2022 | 22H0401-60 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1260 low on one column for CCV2 and CCV4, CCV6, and CCVA in SKI0200. The internal standard areas were within limits except for HBBP internal standard which is out on one column for 22H0401-3, 22H0401-43, 22H0401-58 and 22H0401-5. The second column is in control. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination except for the method blank for batch BKK0602 which contained mercury contamination (0.00690 mg/kg). All Mercury results are greater than the qualification limit of 0.0345 mg/kg and no further qualification is required.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB08-08212022 (results reported in SDG 22H0491) is associated with all sample results reported in this SDG. The rinse blank was free from contamination.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Sample SIB-SC-C19-2-3-08/19/2022 had a high %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]. The detected Aroclor results for this sample should be qualified J with reason code SSH and non-detections should not be qualified.

Qualification: The detected Aroclor results for sample SIB-SC-C19-2-3-08/19/2022 are qualified J with reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-C19-11-12-08/19/2022 and SIB-SC-I03-4-5-08/19/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on samples SIB-SC-C19-11-12-08/19/2022 and SIB-SC-I03-3-4-08/19/2022 (metals) and had all %R and RPDs within QAPP control limits except for the MS/MSD for sample SIB-SC-C19-11-12-08/19/2022 (Method 7471B) which had the RPD exceed QC limits. All detected Mercury results for batch BKK0602 should be qualified J non-detections should not be qualified.

Qualification: Samples FD-45-08/19/2022, FD-46-08/19/2022, SIB-SC-C19-10-11-08/19/2022, SIB-SC-C19-12-13-08/19/2022, SIB-SC-C19-14-15-08/19/2022, SIB-SC-C19-5-6-08/19/2022, SIB-SC-C19-7-8-08/19/2022, SIB-SC-C19-8-9-08/19/2022, SIB-SC-I03-0-1-08/19/2022, SIB-SC-I03-1-2-08/19/2022, SIB-SC-I03-4-5-08/19/2022, SIB-SC-I03-2-3-08/19/2022, SIB-SC-J03-0-1-08/19/2022, SIB-SC-J03-1-2-08/19/2022, SIB-SC-J03-2-3-08/19/2022, SIB-SC-C19-11-12-08/19/2022, SIB-SC-C19-13-14-08/19/2022, SIB-SC-C19-6-7-08/19/2022, SIB-SC-C19-9-10-08/19/2022 and SIB-SC-I03-5-6-08/19/2022 are qualified J.

Field Duplicate – Samples FD-45-08/19/2022 and FD-46-08/19/2022 are the field duplicates of samples SIB-SC-C19-12-13-08/19/2022 and SIB-SC-I03-2-3-08/19/2022, respectively. The results of both duplicate pairs met the acceptance criteria for precision. Sample SIB-SC-B22-1-2-08/20/2022 is the parent sample of field duplicate FD-47-08/20/2022 (results reported in SDG 22H0423). The results of this duplicate pair met the acceptance criteria for precision.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-SC-C19-11-12-08/19/2022 and SIB-SC-I03-3-4-08/19/2022 (metals). The duplicate pairs met the acceptance criteria for precision.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-C19-1-2-08/19/2022 | None required. | | | | | |
| SIB-SC-C19-2-3-08/19/2022 | Aroclor 1248 | 18.4 | D, J | 18.4 | J | SSH |
| | Aroclor 1254 | 41.8 | D | 41.8 | J | SSH |
| | Aroclor 1260 | 109 | D | 109 | J | SSH |
| SIB-SC-C19-3-4-08/19/2022 | None required. | | | | | |
| SIB-SC-C19-4-5-08/19/2022 | None required. | | | | | |
| SIB-SC-C19-5-6-08/19/2022 | Mercury | 0.163 | B | 0.163 | J | MSP |
| SIB-SC-C19-6-7-08/19/2022 | Mercury | 0.0851 | B | 0.0851 | J | MSP |
| SIB-SC-C19-7-8-08/19/2022 | Mercury | 0.0566 | B | 0.0566 | J | MSP |
| SIB-SC-C19-8-9-08/19/2022 | Mercury | 0.057 | B | 0.057 | J | MSP |
| SIB-SC-C19-9-10-08/19/2022 | Mercury | 0.119 | B | 0.119 | J | MSP |
| SIB-SC-C19-10-11-08/19/2022 | Mercury | 0.0797 | B | 0.0797 | J | MSP |
| SIB-SC-C19-11-12-08/19/2022 | Mercury | 0.0884 | B | 0.0884 | J | MSP |
| SIB-SC-C19-12-13-08/19/2022 | Mercury | 0.0556 | B | 0.0556 | J | MSP |
| SIB-SC-C19-13-14-08/19/2022 | Mercury | 0.0443 | B | 0.0443 | J | MSP |
| SIB-SC-C19-14-15-08/19/2022 | Mercury | 0.0355 | B | 0.0355 | J | MSP |
| FD-45-08/19/2022 | Mercury | 0.051 | B | 0.051 | J | MSP |
| SIB-SC-I03-0-1-08/19/2022 | Mercury | 0.257 | B | 0.257 | J | MSP |
| SIB-SC-I03-1-2-08/19/2022 | Mercury | 0.128 | B | 0.128 | J | MSP |
| SIB-SC-I03-2-3-08/19/2022 | Mercury | 0.0619 | B | 0.0619 | J | MSP |
| SIB-SC-I03-3-4-08/19/2022 | None required. | | | | | |
| SIB-SC-I03-4-5-08/19/2022 | Mercury | 0.0371 | B | 0.0371 | J | MSP |
| SIB-SC-I03-5-6-08/19/2022 | Mercury | 0.0418 | B | 0.0418 | J | MSP |
| FD-46-08/19/2022 | Mercury | 0.065 | B | 0.065 | J | MSP |
| SIB-SC-J03-0-1-08/19/2022 | Mercury | 0.348 | B | 0.348 | J | MSP |
| SIB-SC-J03-1-2-08/19/2022 | Mercury | 0.28 | B | 0.28 | J | MSP |
| SIB-SC-J03-2-3-08/19/2022 | Mercury | 0.105 | B | 0.105 | J | MSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-J03-3-4-08/19/2022 | None required. | | | | | |
| SIB-SC-J03-4-5-08/19/2022 | None required. | | | | | |
| SIB-SC-J03-5-6-08/19/2022 | None required. | | | | | |
| SIB-SC-K01-1-2-08/20/2022 | None required. | | | | | |
| SIB-SC-K01-2-3-08/20/2022 | None required. | | | | | |
| SIB-SC-K01-3-4-08/20/2022 | None required. | | | | | |
| SIB-SC-K01-4-5-08/20/2022 | None required. | | | | | |
| SIB-SC-K01-5-5.7-08/20/2022 | None required. | | | | | |
| SIB-SC-B22-1-2-08/20/2022 | None required. | | | | | |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

HydroGeoLogic, Inc
11107 Sunset Hills Rd. Suite 400
Reston, VA 20190

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C28601-1

SDG: 22H0423

July 28, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index

Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|---------------------------|------------|--------|-----|--------|---------|
| 22H0423 | SIB-SC-B22-2-3-08202022 | 22H0423-01 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B22-3-4-08202022 | 22H0423-02 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B22-4-5-08202022 | 22H0423-03 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B22-5-6-08202022 | 22H0423-04 | SE | ✓ | ✓ | ✓ |
| 22H0423 | FD-47-08/20/2022 | 22H0423-09 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B23-2-3-08202022 | 22H0423-12 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B23-3-4-08202022 | 22H0423-13 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B23-4-5-08202022 | 22H0423-14 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B23-5-6-08202022 | 22H0423-15 | SE | ✓ | ✓ | ✓ |
| 22H0423 | FD-48-08/20/2022 | 22H0423-20 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-0-1-08202022 | 22H0423-21 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-1-2-08202022 | 22H0423-22 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-2-3-08202022 | 22H0423-23 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-3-4-08202022 | 22H0423-24 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-4-5-08202022 | 22H0423-25 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B24-5-6-08202022 | 22H0423-26 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-0-1-08202022 | 22H0423-30 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-1-2-08202022 | 22H0423-31 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-2-3-08202022 | 22H0423-32 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-3-4-08202022 | 22H0423-33 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-4-5-08202022 | 22H0423-34 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-B18-5-6-08202022 | 22H0423-35 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L09-1-2-08212022 | 22H0423-44 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L09-2-3-08212022 | 22H0423-45 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L09-3-4-08212022 | 22H0423-46 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L09-4-5-08212022 | 22H0423-47 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L09-5-6-08212022 | 22H0423-48 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L08-1-2-08212022 | 22H0423-59 | SE | ✓ | ✓ | ✓ |
| 22H0423 | SIB-SC-L08-2-3-08212022 | 22H0423-60 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0423 | 30 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

All quality control samples for extraction batch BKH0711 were missing from the laboratory report. The laboratory was contacted and resubmitted the report with the missing information.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS/LCSD) | ✓ | Reporting Limits |
| ✓ | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

Two sets of field duplicates were submitted:

FD-47-08202022 & SIB-SC-B22-1-2-08202022

FD-48-08202022 & SIB-SC-B23-1-2-08202022

All samples were non-detected for all target analytes. Refer to the LCS/LCSD and MS/MSD for precision evaluation.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, MS/MSD, and SRM recoveries. Precision was acceptable based on the field duplicate, LCS/LCSD and MS/MSD RPD values.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22H0423 | 30 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| ✓ | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Time

One or more client identifications as listed on the chains-of-custody (COC) were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples. Based on review of the table of equipment blank associations, equipment blank EB08-08212022 is associated with the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22H0491. EB08-08212022 was free from contamination.

Field Duplicates

For results greater than five times (5x) the RL, the RPD control limit is 50%. If either result is less than 5x the RL, the difference between the results is used to evaluate field precision. For sediments, the difference must be less than 2x the RL.

Two sets of field duplicates were submitted:

- FD-47-08/20/2022 & SIB-SC-B22-1-2-08202022. All acceptance criteria were met.
- FD-48-08/20/2022 & SIB-SC-B23-1-2-08/20/2022. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the MS and laboratory control sample recoveries. Precision was acceptable as demonstrated by the laboratory duplicate and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW6020B | ARSENIC | 2.93 | mg/kg | D | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW6020B | CADMIUM | | mg/kg | D U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW6020B | COPPER | 31.1 | mg/kg | D | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW6020B | LEAD | 5.58 | mg/kg | D | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW6020B | ZINC | 63.1 | mg/kg | D | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW7471B | MERCURY | 0.0367 | mg/kg | | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | 22H0423-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW6020B | ARSENIC | 3.42 | mg/kg | D | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW6020B | COPPER | 35.6 | mg/kg | D | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW6020B | LEAD | 5.95 | mg/kg | D | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW6020B | ZINC | 69.3 | mg/kg | D | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW7471B | MERCURY | 0.0287 | mg/kg | | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | 22H0423-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW6020B | ARSENIC | 3.29 | mg/kg | D | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW6020B | COPPER | 34 | mg/kg | D | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW6020B | LEAD | 5.8 | mg/kg | D | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW6020B | ZINC | 70.2 | mg/kg | D | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW7471B | MERCURY | 0.0328 | mg/kg | | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | 22H0423-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW6020B | ARSENIC | 3.09 | mg/kg | D | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW6020B | COPPER | 35.1 | mg/kg | D | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW6020B | LEAD | 5.85 | mg/kg | D | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW6020B | ZINC | 70 | mg/kg | D | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW7471B | MERCURY | 0.0397 | mg/kg | | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | 22H0423-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW6020B | ARSENIC | 2.66 | mg/kg | D | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW6020B | COPPER | 32.9 | mg/kg | D | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW6020B | LEAD | 5.88 | mg/kg | D | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW6020B | ZINC | 62.5 | mg/kg | D | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW7471B | MERCURY | 0.0487 | mg/kg | | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-47-08/20/2022 | 22H0423-09 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW6020B | ARSENIC | 3.04 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW6020B | COPPER | 35.3 | mg/kg | D | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW6020B | LEAD | 6 | mg/kg | D | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW6020B | ZINC | 70.9 | mg/kg | D | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW7471B | MERCURY | 0.0311 | mg/kg | J | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW6020B | ARSENIC | 2.96 | mg/kg | D | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW6020B | COPPER | 32.7 | mg/kg | D | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW6020B | LEAD | 5.8 | mg/kg | D | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW6020B | ZINC | 66.9 | mg/kg | D | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW7471B | MERCURY | 0.0453 | mg/kg | | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | 22H0423-12 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW6020B | ARSENIC | 3.25 | mg/kg | D | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW6020B | COPPER | 35.9 | mg/kg | D | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW6020B | LEAD | 6.05 | mg/kg | D | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW6020B | ZINC | 71.9 | mg/kg | D | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW7471B | MERCURY | 0.0412 | mg/kg | | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | 22H0423-13 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW6020B | ARSENIC | 2.84 | mg/kg | D | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW6020B | COPPER | 34.2 | mg/kg | D | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW6020B | LEAD | 5.81 | mg/kg | D | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW6020B | ZINC | 68.1 | mg/kg | D | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW7471B | MERCURY | 0.0339 | mg/kg | | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | 22H0423-14 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW6020B | ARSENIC | 3.59 | mg/kg | D | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW6020B | CADMIUM | 0.12 | mg/kg | D J | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW6020B | COPPER | 37.4 | mg/kg | D | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW6020B | LEAD | 5.93 | mg/kg | D | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW6020B | ZINC | 72.2 | mg/kg | D | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW7471B | MERCURY | 0.0507 | mg/kg | | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | 22H0423-15 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW6020B | ARSENIC | 3.04 | mg/kg | D | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| FD-48-08/20/2022 | 22H0423-20 | SW6020B | COPPER | 34.7 | mg/kg | D | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW6020B | LEAD | 6.25 | mg/kg | D | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW6020B | ZINC | 70.6 | mg/kg | D | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW7471B | MERCURY | 0.033 | mg/kg | J | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| FD-48-08/20/2022 | 22H0423-20 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW6020B | ARSENIC | 2.89 | mg/kg | D | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW6020B | CADMIUM | 0.17 | mg/kg | D | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW6020B | COPPER | 35.7 | mg/kg | D | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW6020B | LEAD | 6.31 | mg/kg | D | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW6020B | ZINC | 79.4 | mg/kg | D | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW7471B | MERCURY | 0.0495 | mg/kg | | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | 22H0423-21 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW6020B | ARSENIC | 3.28 | mg/kg | D | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW6020B | COPPER | 35 | mg/kg | D | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW6020B | LEAD | 6.25 | mg/kg | D | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW6020B | ZINC | 79.6 | mg/kg | D | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW7471B | MERCURY | 0.0452 | mg/kg | | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | 22H0423-22 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW6020B | ARSENIC | 2.9 | mg/kg | D | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW6020B | COPPER | 36.6 | mg/kg | D | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW6020B | LEAD | 6.49 | mg/kg | D | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW6020B | ZINC | 74.2 | mg/kg | D | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW7471B | MERCURY | 0.0359 | mg/kg | | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | 22H0423-23 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW6020B | ARSENIC | 2.76 | mg/kg | D | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW6020B | CADMIUM | 0.15 | mg/kg | D | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW6020B | COPPER | 36.9 | mg/kg | D | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW6020B | LEAD | 6.18 | mg/kg | D | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW6020B | ZINC | 73.5 | mg/kg | D | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW7471B | MERCURY | 0.0334 | mg/kg | | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | 22H0423-24 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW6020B | ARSENIC | 2.76 | mg/kg | D | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW6020B | COPPER | 35.4 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
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| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW6020B | LEAD | 5.99 | mg/kg | D | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW6020B | ZINC | 73 | mg/kg | D | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW7471B | MERCURY | 0.0347 | mg/kg | J | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | 22H0423-25 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW6020B | ARSENIC | 2.16 | mg/kg | D | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW6020B | COPPER | 26.4 | mg/kg | D | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW6020B | LEAD | 4.07 | mg/kg | D | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW6020B | ZINC | 53.5 | mg/kg | D | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW7471B | MERCURY | 0.0895 | mg/kg | | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | 22H0423-26 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW6020B | ARSENIC | 2.1 | mg/kg | D | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW6020B | COPPER | 22.2 | mg/kg | D | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW6020B | LEAD | 4.01 | mg/kg | D | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW6020B | ZINC | 50.7 | mg/kg | D | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW7471B | MERCURY | 0.0354 | mg/kg | | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-0-1-08202022 | 22H0423-30 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW6020B | ARSENIC | 2.19 | mg/kg | D | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW6020B | CADMIUM | 0.08 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW6020B | COPPER | 23.8 | mg/kg | D | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW6020B | LEAD | 4.1 | mg/kg | D | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW6020B | ZINC | 54.2 | mg/kg | D | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW7471B | MERCURY | 0.0293 | mg/kg | J | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | 22H0423-31 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW6020B | ARSENIC | 2.35 | mg/kg | D | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW6020B | COPPER | 24.4 | mg/kg | D | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW6020B | LEAD | 4.19 | mg/kg | D | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW6020B | ZINC | 54.6 | mg/kg | D | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW7471B | MERCURY | 0.0334 | mg/kg | | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | 22H0423-32 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW6020B | ARSENIC | 2.44 | mg/kg | D | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW6020B | CADMIUM | 0.09 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW6020B | COPPER | 26.5 | mg/kg | D | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW6020B | LEAD | 4.23 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW6020B | ZINC | 54.7 | mg/kg | D | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW7471B | MERCURY | 0.0392 | mg/kg | | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | 22H0423-33 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW6020B | ARSENIC | 2.7 | mg/kg | D | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW6020B | COPPER | 31.1 | mg/kg | D | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW6020B | LEAD | 4.81 | mg/kg | D | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW6020B | ZINC | 62.3 | mg/kg | D | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW7471B | MERCURY | 0.0356 | mg/kg | | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1254 (AROCOLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1260 (AROCOLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | 22H0423-34 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW6020B | ARSENIC | 2.48 | mg/kg | D | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW6020B | CADMIUM | 0.1 | mg/kg | D J | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW6020B | COPPER | 24.4 | mg/kg | D | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW6020B | LEAD | 4.21 | mg/kg | D | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW6020B | ZINC | 54.5 | mg/kg | D | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW7471B | MERCURY | 0.0362 | mg/kg | | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | 22H0423-35 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW6020B | ARSENIC | 2.05 | mg/kg | D | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW6020B | CADMIUM | | mg/kg | D U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW6020B | COPPER | 15.5 | mg/kg | D | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW6020B | LEAD | 5.2 | mg/kg | D | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW6020B | ZINC | 52.7 | mg/kg | D | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW7471B | MERCURY | 0.027 | mg/kg | | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1254 (AROCLOR 1254) | 6 | ug/kg | | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | 22H0423-44 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW6020B | ARSENIC | 1.95 | mg/kg | D | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW6020B | COPPER | 12.4 | mg/kg | D | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW6020B | LEAD | 6.28 | mg/kg | D | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW6020B | ZINC | 45.6 | mg/kg | D | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW7471B | MERCURY | 0.0264 | mg/kg | J | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1254 (AROCLOR 1254) | 5.2 | ug/kg | | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | 22H0423-45 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW6020B | ARSENIC | 2.55 | mg/kg | D | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW6020B | COPPER | 17.1 | mg/kg | D | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW6020B | LEAD | 4.11 | mg/kg | D | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW6020B | ZINC | 47.9 | mg/kg | D | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW7471B | MERCURY | 0.0315 | mg/kg | | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | 22H0423-46 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW6020B | ARSENIC | 2.15 | mg/kg | D | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW6020B | COPPER | 15.3 | mg/kg | D | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW6020B | LEAD | 2.36 | mg/kg | D | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW6020B | ZINC | 46 | mg/kg | D | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW7471B | MERCURY | 0.0156 | mg/kg | J | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-4-5-08212022 | 22H0423-47 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW6020B | ARSENIC | 1.94 | mg/kg | D | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW6020B | CADMIUM | 0.04 | mg/kg | D J | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW6020B | COPPER | 14.7 | mg/kg | D | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW6020B | LEAD | 1.88 | mg/kg | D | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW6020B | ZINC | 42.7 | mg/kg | D | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW7471B | MERCURY | 0.0078 | mg/kg | J | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|------------|---------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L09-5-6-08212022 | 22H0423-48 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW6020B | ARSENIC | 2.84 | mg/kg | D | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW6020B | CADMIUM | 0.06 | mg/kg | D J | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW6020B | COPPER | 22.5 | mg/kg | D | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW6020B | LEAD | 4.87 | mg/kg | D | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW6020B | ZINC | 55.8 | mg/kg | D | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW7471B | MERCURY | 0.0305 | mg/kg | J | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1254 (AROCLOR 1254) | 3.2 | ug/kg | J | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | 22H0423-59 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW6020B | ARSENIC | 2.85 | mg/kg | D | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW6020B | CADMIUM | 0.07 | mg/kg | D J | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW6020B | COPPER | 26.6 | mg/kg | D | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW6020B | LEAD | 4.59 | mg/kg | D | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW6020B | ZINC | 58.9 | mg/kg | D | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW7471B | MERCURY | 0.0523 | mg/kg | | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1254 (AROCLOR 1254) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1260 (AROCLOR 1260) | | ug/kg | U | | | ✓ |
| SIB-SC-L08-2-3-08212022 | 22H0423-60 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.39 | pg/g | | | | ✓ |
| SIB-SC-B23-3-4-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.64 | pg/g | | | | ✓ |
| SIB-SC-B23-5-6-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.44 | pg/g | | | | ✓ |
| SIB-SC-L08-1-2-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.6 | pg/g | | | | ✓ |
| SIB-SC-L08-2-3-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.45 | pg/g | | | | ✓ |
| SIB-SC-L09-1-2-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.45 | pg/g | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|---------------------------|--------|--------|--|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SC-L09-4-5-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.55 | pg/g | | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.49 | pg/g | | | | ✓ |
| SIB-SC-L09-2-3-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.35 | pg/g | | | | ✓ |
| SIB-SC-L09-5-6-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.48 | pg/g | | | | ✓ |
| SIB-SC-L09-3-4-08212022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.43 | pg/g | | | | ✓ |
| SIB-SC-B23-4-5-08202022 | Calc | CALC | 2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0.5) | 0.47 | pg/g | | | | ✓ |
| SIB-SC-B18-0-1-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B18-1-2-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B18-2-3-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B18-3-4-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B18-5-6-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B22-4-5-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-3-4-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-5-6-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-1-2-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-4-5-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-L08-1-2-08212022 | Calc | CALC | SUM OF AROCLORS | 8.1 | ug/kg | | | | ✓ |
| SIB-SC-L08-2-3-08212022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-L09-1-2-08212022 | Calc | CALC | SUM OF AROCLORS | 10.9 | ug/kg | | | | ✓ |
| SIB-SC-L09-4-5-08212022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B22-2-3-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-2-3-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-L09-2-3-08212022 | Calc | CALC | SUM OF AROCLORS | 10.1 | ug/kg | | | | ✓ |
| SIB-SC-L09-5-6-08212022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B22-3-4-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-0-1-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-3-4-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-L09-3-4-08212022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B18-4-5-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-4-5-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B22-5-6-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B24-5-6-08202022 | Calc | CALC | SUM OF AROCLORS | 0.8 | ug/kg | U | | | ✓ |
| SIB-SC-B23-2-3-08202022 | Calc | CALC | SUM PCB CONGENERS | 488 | pg/g | | | | ✓ |
| SIB-SC-B23-3-4-08202022 | Calc | CALC | SUM PCB CONGENERS | 429 | pg/g | | | | ✓ |
| SIB-SC-B23-5-6-08202022 | Calc | CALC | SUM PCB CONGENERS | 326 | pg/g | | | | ✓ |
| SIB-SC-B23-1-2-08/20/2022 | Calc | CALC | SUM PCB CONGENERS | 472 | pg/g | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|-------------------------|--------|--------|-------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SC-B23-4-5-08202022 | Calc | CALC | SUM PCB CONGENERS | 378 | pg/g | | | | ✓ |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0423 |
| Laboratory: ARI | Date: 8/11/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (9/25/23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-B22-2-3-08/20/2022 | 22H0423-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B22-3-4-08/20/2022 | 22H0423-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B22-4-5-08/20/2022 | 22H0423-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B22-5-6-08/20/2022 | 22H0423-04 | PCB Aroclors and Total Metals | Solid |
| FD-47-08/20/2022 | 22H0423-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B23-1-2-08/20/2022 | 22H0423-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B23-2-3-08/20/2022 | 22H0423-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B23-3-4-08/20/2022 | 22H0423-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B23-4-5-08/20/2022 | 22H0423-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B23-5-6-08/20/2022 | 22H0423-15 | PCB Aroclors and Total Metals | Solid |
| FD-48-08/20/2022 | 22H0423-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-0-1-08/20/2022 | 22H0423-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-1-2-08/20/2022 | 22H0423-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-2-3-08/20/2022 | 22H0423-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-3-4-08/20/2022 | 22H0423-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-4-5-08/20/2022 | 22H0423-25 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B24-5-6-08/20/2022 | 22H0423-26 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-0-1-08/20/2022 | 22H0423-30 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-1-2-08/20/2022 | 22H0423-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-2-3-08/20/2022 | 22H0423-32 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-3-4-08/20/2022 | 22H0423-33 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-4-5-08/20/2022 | 22H0423-34 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B18-5-6-08/20/2022 | 22H0423-35 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L09-1-2-08/21/2022 | 22H0423-44 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L09-2-3-08/21/2022 | 22H0423-45 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L09-3-4-08/21/2022 | 22H0423-46 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L09-4-5-08/21/2022 | 22H0423-47 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L09-5-6-08/21/2022 | 22H0423-48 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L08-1-2-08/21/2022 | 22H0423-59 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L08-2-3-08/21/2022 | 22H0423-60 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The internal standard areas were within limits except for internal standards in sample 22H0423-02 which are out of control high. The sample is non-detect and no further action was taken. The lower value was used in sample 23F0167-10. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB08-08212022 (results reported in SDG 22H0491) is associated with all sample results reported in this SDG. The rinse blank was free from contamination.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-B22-2-3-08/20/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

An MS/MSD was performed on samples SIB-SC-B22-2-3-08/20/2022 and SIB-SC-B23-2-3-08/20/2022 (metals) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

Field Duplicate – Samples FD-47-08/20/2022 and FD-48-08/20/2022 are field duplicates of samples SIB-SC-B22-1-2-08/20/2022 (results reported in SDG 22H0401) and SIB-SC-B23-1-2-08/20/2022, respectively. The both duplicate pairs met the acceptance criteria for precision.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-SC-B22-2-3-08/20/2022 and SIB-SC-B23-2-3-08/20/2022 (metals) and all duplicate pairs met the acceptance criteria for precision.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-B22-2-3-08/20/2022 | None required. | | | | | |
| SIB-SC-B22-3-4-08/20/2022 | None required. | | | | | |
| SIB-SC-B22-4-5-08/20/2022 | None required. | | | | | |
| SIB-SC-B22-5-6-08/20/2022 | None required. | | | | | |
| FD-47-08/20/2022 | None required. | | | | | |
| SIB-SC-B23-1-2-08/20/2022 | None required. | | | | | |
| SIB-SC-B23-2-3-08/20/2022 | None required. | | | | | |
| SIB-SC-B23-3-4-08/20/2022 | None required. | | | | | |
| SIB-SC-B23-4-5-08/20/2022 | None required. | | | | | |
| SIB-SC-B23-5-6-08/20/2022 | None required. | | | | | |
| FD-48-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-0-1-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-1-2-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-2-3-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-3-4-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-4-5-08/20/2022 | None required. | | | | | |
| SIB-SC-B24-5-6-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-0-1-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-1-2-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-2-3-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-3-4-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-4-5-08/20/2022 | None required. | | | | | |
| SIB-SC-B18-5-6-08/20/2022 | None required. | | | | | |
| SIB-SC-L09-1-2-08/21/2022 | None required. | | | | | |
| SIB-SC-L09-2-3-08/21/2022 | None required. | | | | | |
| SIB-SC-L09-3-4-08/21/2022 | None required. | | | | | |
| SIB-SC-L09-4-5-08/21/2022 | None required. | | | | | |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-L09-5-6-08/21/2022 | None required. | | | | | |
| SIB-SC-L08-1-2-08/21/2022 | None required. | | | | | |
| SIB-SC-L08-2-3-08/21/2022 | None required. | | | | | |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0523 |
| Laboratory: ARI | Date: 5/23/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (5.25.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-R06-1-2-08/22/2022 | 22H0523-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R06-2-3-08/22/2022 | 22H0523-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R06-3-4-08/22/2022 | 22H0523-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R06-4-5-08/22/2022 | 22H0523-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R06-5-6-08/22/2022 | 22H0523-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R04-1-2-08/22/2022 | 22H0523-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R04-2-3-08/22/2022 | 22H0523-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R04-3-4-08/22/2022 | 22H0523-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R04-4-5-08/22/2022 | 22H0523-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R04-5-6-08/22/2022 | 22H0523-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R02-1-2-08/22/2022 | 22H0523-28 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R02-2-3-08/22/2022 | 22H0523-29 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R02-3-4-08/22/2022 | 22H0523-30 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R02-4-5-08/22/2022 | 22H0523-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-R02-5-6-08/22/2022 | 22H0523-32 | PCB Aroclors and Total Metals | Solid |
| FD-50-08/22/2022 | 22H0523-39 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – An issue was noted with the initial and continuing calibrations were within method requirements except for aroclor 1260 which is low on one column for CCV2 and CCV4, CCV6, and CCVA in batch SKI0200. Also, the PCB internal standard areas were within limits except for HBBP internal standard which out on both columns for 22H0523-5 and -6 and out on one column only for 22H0523-4. Samples 22H0523-5 and 6 were analyzed at 5x dilutions with internal standards in control. Both issues are outside of 2A validation's scope; no qualifications required.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinse Blanks – Equipment rinse blank EB09-08242022 (results reported in SDG 22H0491) is associated with all sample results reported in this SDG. No Aroclors or metals were detected in this EB with the exception of chromium. Chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-R02-3-4-08/22/2022 for all methods; an MS/MSD was also performed for metals using SIB-SC-R06-1-2-08/22/2022. The metals MS performed on SIB-SC-R02-3-4-08/22/2022 had a %R for lead of 126%, which is slightly above the upper limit of 125%. The corresponding serial dilution check met the control limits for lead. Based on the totality of evidence, the judgment of the HGL reviewer is that no qualification is required. The metals MSD performed on SIB-SC-R06-1-2-08/22/2022 had a %R of 73.6% for arsenic, which is slightly below the lower limit of 75%. The corresponding serial dilution check met the control limits for arsenic; a post-digestion spike for arsenic was also performed and in control. Based on the totality of evidence, the judgment of the HGL reviewer is that no qualification is required.

The MSD for mercury had a %R of 63.3%, which is below the lower limit of 75%, and the mercury MS/MSD had an RPD of 42.80 percent, which is above the control limit of 20%. The post-digestion spike performed for mercury was within the control limits of 0-200% but was like the low MSD %R. Based on the totality of evidence, all mercury results reported in association with preparation batch BK10181 (9.9.22) are detections and should be qualified J-MSL, MSP.

***Qualification:* All mercury results except for sample SIB-SC-R02-1-2-08/22/2022 are qualified J-MSL,MSP.**

Field Duplicate – Sample FD-50-08/22/2022 is a field duplicate of sample SIB-SC-R02-2-3-08222022. RPD of the duplicate pair met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed for 6020B metals using sample SIB-SC-R02-3-4-08/22/2022 and SIB-SC-R06-1-2-08/22/2022. A laboratory duplicate was performed for mercury using sample SIB-SC-R02-3-4-08/22/2022. The RPDs of all duplicate pairs met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-

detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Due to internal standard issues, the laboratory reported undiluted and 5x diluted results for samples SIB-SC-R06-4-5-08/22/2022 and SIB-SC-R06-5-6-08/22/2022. The undiluted results reported for each sample showed multiple Aroclor detections, while these detections appear to have been diluted out in the 5x diluted analyses. Surrogate %Rs were in control in both the diluted and undiluted analyses and the undiluted analyses are selected as the reportable Aroclor results for these two samples.

Qualification: All Aroclor results reported from the 5x diluted analyses of samples SIB-SC-R06-4-5-08/22/2022 and SIB-SC-R06-5-6-08/22/2022 are qualified DNR-EXC and have the "reportable_result" field changed from "Yes" to "No" in the EDD.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--|----------------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-R06-1-2-08/22/2022 | Mercury | 0.0718 | -- | J | J | MSL,MSP |
| SIB-SC-R06-2-3-08/22/2022 | Mercury | 0.0795 | -- | J | J | MSL,MSP |
| SIB-SC-R06-3-4-08/22/2022 | Mercury | 0.0929 | -- | J | J | MSL,MSP |
| SIB-SC-R06-4-5-08/22/2022 | Mercury | 0.0899 | -- | J | J | MSL,MSP |
| | All Aroclor results | varies | varies | Use results | | |
| SIB-SC-R06-4-5-08/22/2022 (5x reanalysis) | All Aroclor results ¹ | varies | varies | DNR | DNR | EXC |
| SIB-SC-R06-5-6-08/22/2022 | Mercury | 0.101 | -- | J | J | MSL,MSP |
| | All Aroclor results | varies | varies | Use results | | |
| SIB-SC-R06-5-6-08/22/2022 (5x diluted reanalysis) | All Aroclor results ¹ | varies | varies | DNR | DNR | EXC |
| SIB-SC-R04-1-2-08/22/2022 | Mercury | 0.154 | -- | J | J | MSL,MSP |
| SIB-SC-R04-2-3-08/22/2022 | Mercury | 0.26 | -- | J | J | MSL,MSP |
| SIB-SC-R04-3-4-08/22/2022 | Mercury | 0.165 | -- | J | J | MSL,MSP |
| SIB-SC-R04-4-5-08/22/2022 | Mercury | 0.112 | -- | J | J | MSL,MSP |
| SIB-SC-R04-5-6-08/22/2022 | Mercury | 0.164 | -- | J | J | MSL,MSP |
| SIB-SC-R02-1-2-08/22/2022 | None required. | | | | | |
| SIB-SC-R02-2-3-08/22/2022 | Mercury | 0.0971 | -- | J | J | MSL,MSP |
| SIB-SC-R02-3-4-08/22/2022 | Mercury | 0.116 | -- | J | J | MSL,MSP |
| SIB-SC-R02-4-5-08/22/2022 | Mercury | 0.0815 | -- | J | J | MSL,MSP |
| SIB-SC-R02-5-6-08/22/2022 | Mercury | 0.136 | -- | J | J | MSL,MSP |
| FD-50-08/22/2022 | Mercury | 0.139 | -- | J | J | MSL,MSP |

¹ Results qualified as DNR also have the "reportable_result" data field changed to "No"; as no results from the affected samples are used, this extends to the reported internal standards and surrogates as well.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0525 |
| Laboratory: ARI | Date: 5/23/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (5.25.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|-------------------------------|--------|
| SIB-SC-M05-1-2-08/22/2022 | 22H0525-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M05-2-3-08/22/2022 | 22H0525-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M05-3-4-08/22/2022 | 22H0525-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M05-4-5-08/22/2022 | 22H0525-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M05-5-6-08/22/2022 | 22H0525-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B34-1-2-08/22/2022 | 22H0525-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B34-2-3-08/22/2022 | 22H0525-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B34-3-4-08/22/2022 | 22H0525-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B34-4-5-08/22/2022 | 22H0525-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B34-5-6-08/22/2022 | 22H0525-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-0-1-08/23/2022 | 22H0525-19 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-1-2-08/23/2022 | 22H0525-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-2-3-08/23/2022 | 22H0525-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-3-4-08/23/2022 | 22H0525-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-4-5-08/23/2022 | 22H0525-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-5-6-08/23/2022 | 22H0525-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-0-1-08/23/2022 | 22H0525-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-1-2-08/23/2022 | 22H0525-32 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-2-3-08/23/2022 | 22H0525-33 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-3-4-08/23/2022 | 22H0525-34 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-4-5-08/23/2022 | 22H0525-35 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C27-5-5-08/23/2022 | 22H0525-36 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-1-2-08/23/2022 | 22H0525-38 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-2-3-08/23/2022 | 22H0525-39 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-3-4-08/23/2022 | 22H0525-40 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – An issue was noted with the initial and continuing calibrations were within method requirements except for Aroclor 1260 which is out of control low in the CCV on one column for SKI0156. Data was reported from the column in control. The Aroclor 1260 is out of control low on one column for CCV2 and CCV4, CCV6, and CCVA SKI0200. Both issues are outside of 2A validation's scope, no qualifications required.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – Mercury was detected at 0.0128 mg/kg in the method blank associated with preparation batch BKK0279, leading to a qualification threshold of 0.064 mg/kg. The detected mercury results for samples SIB-SC-M05-3-4-08/22/2022, SIB-SC-M05-4-5-08/22/2022, and SIB-SC-M05-5-6-08/22/2022 are below the qualification threshold and should be qualified U-MBL. These results are further qualified for MS/MSD discrepancies (see below).

***Qualification:* The mercury results for samples SIB-SC-M05-3-4-08/22/2022, SIB-SC-M05-4-5-08/22/2022, and SIB-SC-M05-5-6-08/22/2022 are qualified U-MBL.**

Rinsate Blanks – Equipment rinse blank EB09-08242022 (results reported in SDG 22H0491) is associated with all sample results reported in this SDG. No Aroclors or metals were detected in this EB with the exception of chromium. Chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-M05-3-4-08/22/2022 (Aroclors only), SIB-SC-B26-3-4-08/23/2022 (all methods), and SIB-SC-M05-1-2-08/22/2022 (mercury only). The MSD performed on sample SIB-SC-M05-1-2-08/22/2022 had a %R of 63.9%, which is below the lower limit of 75%, and the RPD of the MS/MSD pair was 34.3, which is above the RPD limit of 20%. The mercury results reported for associated samples SIB-SC-M05-1-2-08/22/2022, SIB-SC-M05-2-3-08/22/2022, SIB-SC-M05-3-4-08/22/2022, SIB-SC-M05-4-5-08/22/2022, and SIB-SC-M05-5-6-08/22/2022 should be qualified J-MSL,MSP. Note that the mercury results reported for samples SIB-SC-M05-3-4-08/22/2022, SIB-SC-M05-4-5-08/22/2022, and SIB-SC-M05-5-6-08/22/2022 were also qualified U due to method blank contamination and the final qualifier applied to these results is UJ.

***Qualification:* The mercury results for samples SIB-SC-M05-1-2-08/22/2022 and SIB-SC-M05-2-3-08/22/2022 are qualified J-MSL,MSP. The mercury results for samples SIB-SC-M05-3-4-08/22/2022, SIB-SC-M05-4-5-08/22/2022, and SIB-SC-M05-5-6-08/22/2022 are qualified UJ-MBL,MSL,MSP.**

Field Duplicate – Sample FD-51-08/23/2022 (results reported in SDG 22H029) is a field duplicate of sample SIB-SC-B26-2-3-08/23/2022. The RPDs of the duplicate pair met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – Laboratory duplicates were performed using samples SIB-SC-B26-3-4-08/23/2022 (metals and mercury) and SIB-SC-M05-1-2-08/22/2022 (mercury only). The RPDs of the duplicate pairs met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-M05-1-2-08/22/2022 | Mercury | 0.957 | B | J | J | MSL,MSP |
| SIB-SC-M05-2-3-08/22/2022 | Mercury | 0.109 | B | J | J | MSL,MSP |
| SIB-SC-M05-3-4-08/22/2022 | Mercury | 0.0478 | B | UJ | UJ | MBL,MSL,MSP |
| SIB-SC-M05-4-5-08/22/2022 | Mercury | 0.0491 | B | UJ | UJ | MBL,MSL,MSP |
| SIB-SC-M05-5-6-08/22/2022 | Mercury | 0.0446 | B | UJ | UJ | MBL,MSL,MSP |
| SIB-SC-B34-1-2-08/22/2022 | None required. | | | | | |
| SIB-SC-B34-2-3-08/22/2022 | None required. | | | | | |
| SIB-SC-B34-3-4-08/22/2022 | None required. | | | | | |
| SIB-SC-B34-4-5-08/22/2022 | None required. | | | | | |
| SIB-SC-B34-5-6-08/22/2022 | None required. | | | | | |
| SIB-SC-C26-0-1-08/23/2022 | None required. | | | | | |
| SIB-SC-C26-1-2-08/23/2022 | None required. | | | | | |
| SIB-SC-C26-2-3-08/23/2022 | None required. | | | | | |
| SIB-SC-C26-3-4-08/23/2022 | None required. | | | | | |
| SIB-SC-C26-4-5-08/23/2022 | None required. | | | | | |
| SIB-SC-C26-5-6-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-0-1-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-1-2-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-2-3-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-3-4-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-4-5-08/23/2022 | None required. | | | | | |
| SIB-SC-C27-5-5-08/23/2022 | None required. | | | | | |
| SIB-SC-B26-1-2-08/23/2022 | None required. | | | | | |
| SIB-SC-B26-2-3-08/23/2022 | None required. | | | | | |
| SIB-SC-B26-3-4-08/23/2022 | None required. | | | | | |

**Stage 2A Review
Data Quality Control (QC)**

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|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22H0529 |
| Laboratory: ARI | Date: 5/23/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (5.25.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-B26-4-5-08/23/2022 | 22H0529-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-5-6-08/23/2022 | 22H0529-02 | PCB Aroclors and Total Metals | Solid |
| FD-51-08/23/2022 | 22H0529-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-0-1-08/23/2022 | 22H0529-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-1-2-08/23/2022 | 22H0529-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-2-3-08/23/2022 | 22H0529-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-3-4-08/23/2022 | 22H0529-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-4-5-08/23/2022 | 22H0529-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-M04-5-6-08/23/2022 | 22H0529-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-1-2-08/24/2022 | 22H0529-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-2-3-08/24/2022 | 22H0529-23 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-3-4-08/24/2022 | 22H0529-24 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-4-5-08/24/2022 | 22H0529-25 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-5-6-08/24/2022 | 22H0529-26 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N07-0-1-08/24/2022 | 22H0529-30 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N07-1-2-08/24/2022 | 22H0529-31 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N07-2-3-08/24/2022 | 22H0529-32 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N07-3-3-6-08/24/2022 | 22H0529-33 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB09-08242022 (results reported in SDG 22H0491) is associated with all sample results reported in this SDG. No Aroclors or metals were detected in this EB with the exception of chromium. Chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Samples SIB-SC-M04-4-5-08/23/2022, SIB-SC-M04-5-6-08/23/2022, SIB-SC-C20-2-3-08/24/2022, SIB-SC-C20-3-4-08/24/2022, SIB-SC-N07-0-1-08/24/2022, and SIB-SC-N07-1-2-08/24/2022 had high %Rs for surrogate decachlorobiphenyl. The detected Aroclor results reported for samples SIB-SC-M04-4-5-08/23/2022, SIB-SC-M04-5-6-08/23/2022, SIB-SC-C20-2-3-08/24/2022, and SIB-SC-N07-0-1-08/24/2022 should be qualified J-SSH. The %Rs for samples SIB-SC-C20-3-4-08/24/2022 (127%) and SIB-SC-N07-1-2-08/24/2022 (129%) are only slightly above the upper limit of 126%; as the %R for surrogate tetrachloro-m-xylene was in control, the discrepancies for both samples are considered nominal and no qualification is required.

***Qualification:* The detected Aroclor results for samples SIB-SC-M04-4-5-08/23/2022, SIB-SC-M04-5-6-08/23/2022, SIB-SC-C20-2-3-08/24/2022, and SIB-SC-N07-0-1-08/24/2022 are qualified J-SSH.**

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-N07-3-6-08/24/2022 (Aroclors), SIB-SC-N07-2-3-08/24/2022 (mercury), and SIB-SC-B26-4-5-08/23/2022 (metals). All %R and RPDs were within QAPP control limits.

Qualification: None required.

Field Duplicate – Sample FD-51-08/23/2022 is a field duplicate of sample SIB-SC-B26-2-3-08/23/2022 (results reported in SDG 22H0525). The RPDs of the duplicate pair met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-SC-N07-2-3-08/24/2022 (mercury) and SIB-SC-B26-4-5-08/23/2022 (metals). The RPDs of the duplicate pairs met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|-------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-M04-4-5-08/23/2022 | Detected Aroclors | varies | - | varies | J | SSH |
| SIB-SC-M04-5-6-08/23/2022 | Detected Aroclors | varies | - | varies | J | SSH |
| SIB-SC-C20-2-3-08/24/2022 | Detected Aroclors | varies | - | varies | J | SSH |
| SIB-SC-N07-0-1-08/24/2022 | Detected Aroclors | varies | - | varies | J | SSH |
| SIB-SC-B26-4-5-08/23/2022 | None required. | | | | | |
| SIB-SC-B26-5-6-08/23/2022 | None required. | | | | | |
| FD-51-08/23/2022 | None required. | | | | | |
| SIB-SC-M04-0-1-08/23/2022 | None required. | | | | | |
| SIB-SC-M04-1-2-08/23/2022 | None required. | | | | | |
| SIB-SC-M04-2-3-08/23/2022 | None required. | | | | | |
| SIB-SC-M04-3-4-08/23/2022 | None required. | | | | | |
| SIB-SC-C20-1-2-08/24/2022 | None required. | | | | | |
| SIB-SC-C20-3-4-08/24/2022 | None required. | | | | | |
| SIB-SC-C20-4-5-08/24/2022 | None required. | | | | | |
| SIB-SC-C20-5-6-08/24/2022 | None required. | | | | | |
| SIB-SC-N07-1-2-08/24/2022 | None required. | | | | | |
| SIB-SC-N07-2-3-08/24/2022 | None required. | | | | | |
| SIB-SC-N07-3-3.6-08/24/2022 | None required. | | | | | |

**Stage 2A Review
Data Quality Control (QC)**

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| Site: Portland Harbor Superfund Site | SDG #: Case 22I0052 |
| Laboratory: ARI | Date: 6/14/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (6/21/23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-E37-0-1-08/25/2022 | 22I0052-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E37-1-2-08/25/2022 | 22I0052-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E37-2-3-08/25/2022 | 22I0052-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E37-3-4-08/25/2022 | 22I0052-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E37-4-5-08/25/2022 | 22I0052-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E37-5-6-08/25/2022 | 22I0052-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-52-08/25/2022 | 22I0052-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D37-1-2-08/25/2022 | 22I0052-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D37-2-3-08/25/2022 | 22I0052-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D37-3-4-08/25/2022 | 22I0052-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D37-4-5-08/25/2022 | 22I0052-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D37-5-6-08/25/2022 | 22I0052-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-1-2-08/25/2022 | 22I0052-22 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-2-3-08/25/2022 | 22I0052-23 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-3-4-08/25/2022 | 22I0052-24 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-4-5-08/25/2022 | 22I0052-25 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-5-6-08/25/2022 | 22I0052-26 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-6-7-08/25/2022 | 22I0052-27 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-7-8-08/25/2022 | 22I0052-28 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-8-9-08/25/2022 | 22I0052-29 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-9-10-08/25/2022 | 22I0052-30 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-10-11-08/25/2022 | 22I0052-31 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-11-12-08/25/2022 | 22I0052-32 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-12-13-08/25/2022 | 22I0052-33 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-13-14-08/25/2022 | 22I0052-34 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-14-15-08/25/2022 | 22I0052-35 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-1-2-08/25/2022 | 22I0052-39 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-2-3-08/25/2022 | 22I0052-40 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-3-4-08/25/2022 | 22I0052-41 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-4-5-08/25/2022 | 22I0052-42 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-5-6-08/25/2022 | 22I0052-43 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N05-1-2-09/01/2022 | 22I0052-49 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N05-2-3-09/01/2022 | 22I0052-50 | PCB Aroclors and Total Metals/Mercury | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-N05-3-4-09/01/2022 | 22I0052-51 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N05-4-5-09/01/2022 | 22I0052-52 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N05-5-6-09/01/2022 | 22I0052-53 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-J08-1-2-09/01/2022 | 22I0052-59 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-J08-2-3-09/01/2022 | 22I0052-60 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-J08-3-4-09/01/2022 | 22I0052-61 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-J08-4-5-09/01/2022 | 22I0052-62 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples collected on 8/25/22 are associated with rinse blank EB09-08/24/2022 (results reported in SDG 22H0491) and the samples collected on 9/1/22 are associated with rinse blank EB10-09/05/2022 (results reported in SDG 22I0166). Both rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required. Lead was detected slightly above the MDL at 0.062 µg/L in EB10-09/05/2022; all associated lead results are >10x the RL and no qualification is necessary.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – Several of the LCS/LCSD had results reported that were not within the QC limits listed by the QAPP.

- Batch BKI0139 for method 8082A the reporting limit for the LCSD exceeds the QC limit, detections should be qualified J and non-detections should not be qualified.

The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

***Qualification:* Samples with detections prepared in Aroclor batch BKI0139 have J qualifiers applied, reason code LCSH.**

Surrogates – All surrogates were within QAPP control limits with the following exceptions: surrogate decachlorobiphenyl [2C] for sample SIB-SC-N05-4-5-09/01/2022 in PCB Aroclors exceeded QC limits; no results were reported from this column and no qualification is required. It was noted that surrogates tetrachlorometaxylene and tetrachlorometaxylene [2C] were not reported for sample SIB-SC-N00-7-8-08/25/2022 due to chromatographic interference. The raw data indicates that the peaks are distinct but the on-column quantitation corresponds to a recovery >> the upper control limit. In the judgment of the HGL validator, the detected results reported for sample SIB-SC-N00-7-8-08/25/2022 should be qualified J. Sample SIB-SC-J08-1-2-09/01/2022 has a high %R for DCB on column 1; the only detected result reported from this column is Aroclor 1248, which should be qualified J. Sample SIB-SC-J08-4-5-09/01/2022 has a high %R for DCB on column 1; this sample was analyzed at a 10x dilution and no qualification for surrogate discrepancies is required.

Qualification: All detected Aroclor results reported for sample SIB-SC-N00-7-8-08/25/2022 and the detected Aroclor 1248 result for SIB-SC-J08-1-2-09/01/2022 are qualified J, reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-E37-3-4-08/25/2022 and SIB-SC-J08-4-5-09/01/2022 for method 8082A; samples SIB-SC-E37-3-4-08/25/2022 and SIB-SC-N00-9-10-08/25/2022 for method 7471B; samples SIB-SC-E37-3-4-08/25/2022 and SIB-SC-N00-4-5-08/25/2022 for method 6020B; and samples SIB-SC-E37-3-4-08/25/2022 and SIB-SC-N00-4-5-08/25/2022 for method 6020B UCT-KED.

- Batch BKI0139 for method 8082A: the %R for Aroclor 1016 in the MS and the MSD performed on sample SIB-SC-J08-4-5-09/01/2022 was below the QC limits; the results for associated Aroclors 1016, 1221, 1232, and 1242 for sample SIB-SC-J08-4-5-09/01/2022 are non-detections should be qualified UJ. For Aroclor 1260, the %R in the MS and MSD were below QC limits; however, the sample concentration was >4x the spike concentration and the %R results are not applicable.
- Batch BKL0006 for method 6020B UCT-KED: The MS performed on sample SIB-SC-N00-4-5-08/25/2022 had a high %Rs for copper and zinc; the MSD performed on this sample had a low %R for copper but the zinc %R was in control. The sample concentration of copper is >4x the spiked concentration and the %R results are not applicable. The zinc %R discrepancy was only slight and the mean zinc %Rs met the control limit; the laboratory also performed a post-digestion spike for zinc and the PDS met the control limits. In the judgment of the HGL validator, no qualification is required.

Qualification: The Aroclor 1016, 1221, 1232, and 1242 results reported for sample SIB-SC-J08-4-5-09/01/2022 are qualified UJ, reason code MSL.

Field Duplicate – Field duplicate FD-52-08/25/2022 with parent sample SIB-SC-E37-2-3-08/25/2022 was submitted with the samples in this SDG; all results were within QAPP specifications.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for samples SIB-SC-E37-3-4-08/25/2022 for methods 7471B, 6020B, and 6020B UCT-KED; SIB-SC-N00-9-10-08/25/2022 for method 7471B; and SIB-SC-N00-4-5-08/25/2022 for methods 6020B and 6020B UCT-KED. All data was within QAPP requirements.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes

detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

The non-detected cadmium result for sample FD-52-08/25/2022 was reported with a laboratory qualifier of U in the laboratory report but had an incorrect entry of D J in the laboratory_qualifiers field of the EDD. The HGL validator changed the laboratory_qualifiers field to U for this result.

Qualification: None required.

Qualification Summary Table (concentrations in µg/L):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|-------------------------|-----------|---------------|-------------------------|---------------------|-------------|
| SIB-SC-E37-0-1-08/25/2022 | None required. | | | | | |
| SIB-SC-E37-1-2-08/25/2022 | None required. | | | | | |
| SIB-SC-E37-2-3-08/25/2022 | None required. | | | | | |
| SIB-SC-E37-3-4-08/25/2022 | None required. | | | | | |
| SIB-SC-E37-4-5-08/25/2022 | None required. | | | | | |
| SIB-SC-E37-5-6-08/25/2022 | None required. | | | | | |
| FD-52-08/25/2022 | Cadmium (EDD file) | 0.03 | D J | Corrected lab qual to U | -- | -- |
| SIB-SC-D37-1-2-08/25/2022 | None required. | | | | | |
| SIB-SC-D37-2-3-08/25/2022 | None required. | | | | | |
| SIB-SC-D37-3-4-08/25/2022 | None required. | | | | | |
| SIB-SC-D37-4-5-08/25/2022 | None required. | | | | | |
| SIB-SC-D37-5-6-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-1-2-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-2-3-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-3-4-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-4-5-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-5-6-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-6-7-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-7-8-08/25/2022 | PCB-1260 (AROCLOR 1260) | 126 | D | 126 | J | SSH |
| | PCB-1248 (AROCLOR 1248) | 43.3 | D | 43.3 | J | SSH |
| | PCB-1254 (AROCLOR 1254) | 120 | D | 120 | J | SSH |
| SIB-SC-N00-8-9-08/25/2022 | None required. | | | | | |
| SIB-SC-N00-9-10-08/25/2022 | PCB-1260 (AROCLOR 1260) | 141 | - | 141 | J | LCSH |
| | PCB-1248 (AROCLOR 1248) | 56.4 | P1 | 56.4 | J | LCSH |
| | PCB-1254 (AROCLOR 1254) | 131 | - | 131 | J | LCSH |
| SIB-SC-N00-10-11-08/25/2022 | PCB-1248 (AROCLOR 1248) | 133 | D | 133 | J | LCSH |
| | PCB-1260 (AROCLOR 1260) | 194 | D | 194 | J | LCSH |
| | PCB-1254 (AROCLOR 1254) | 296 | D | 296 | J | LCSH |
| SIB-SC-N00-11-12-08/25/2022 | PCB-1260 (AROCLOR 1260) | 104 | - | 104 | J | LCSH |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|--------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-N00-12-13-08/25/2022 | PCB-1254 (AROCOLOR 1254) | 79.2 | - | 79.2 | J | LCSH |
| | PCB-1260 (AROCOLOR 1260) | 27.3 | - | 27.3 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 35 | - | 35 | J | LCSH |
| SIB-SC-N00-13-14-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 23.3 | - | 23.3 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 22.1 | P1 | 22.1 | J | LCSH |
| | PCB-1248 (AROCOLOR 1248) | 8.8 | - | 8.8 | J | LCSH |
| SIB-SC-N00-14-15-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 11 | - | 11 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 22.4 | P1 | 22.4 | J | LCSH |
| | PCB-1248 (AROCOLOR 1248) | 11.1 | - | 11.1 | J | LCSH |
| SIB-SC-O04-1-2-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 10.2 | - | 10.2 | J | LCSH |
| | PCB-1248 (AROCOLOR 1248) | 7.9 | P1 | 7.9 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 12 | - | 12 | J | LCSH |
| SIB-SC-O04-2-3-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 10.3 | P1 | 10.3 | J | LCSH |
| | PCB-1248 (AROCOLOR 1248) | 3.4 | J | 3.4 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 7.2 | - | 7.2 | J | LCSH |
| SIB-SC-O04-3-4-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 5.1 | - | 5.1 | J | LCSH |
| SIB-SC-O04-4-5-08/25/2022 | None required. | | | | | |
| SIB-SC-O04-5-6-08/25/2022 | PCB-1260 (AROCOLOR 1260) | 8.5 | - | 8.5 | J | LCSH |
| | PCB-1248 (AROCOLOR 1248) | 6.7 | - | 6.7 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 12.5 | - | 12.5 | J | LCSH |
| SIB-SC-N05-1-2-09/01/2022 | PCB-1254 (AROCOLOR 1254) | 24.9 | - | 24.9 | J | LCSH |
| | PCB-1260 (AROCOLOR 1260) | 32.9 | - | 32.9 | J | LCSH |
| SIB-SC-N05-2-3-09/01/2022 | PCB-1260 (AROCOLOR 1260) | 23.5 | - | 23.5 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 10 | - | 10 | J | LCSH |
| SIB-SC-N05-3-4-09/01/2022 | None required. | | | | | |
| SIB-SC-N05-4-5-09/01/2022 | None required. | | | | | |
| SIB-SC-N05-5-6-09/01/2022 | None required. | | | | | |
| SIB-SC-J08-1-2-09/01/2022 | PCB-1248 (AROCOLOR 1248) | 60.1 | P1 D | 60.1 | J | LCSH, SSH |
| | PCB-1260 (AROCOLOR 1260) | 167 | D | 167 | J | LCSH |
| | PCB-1254 (AROCOLOR 1254) | 143 | D | 143 | J | LCSH |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|-------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-J08-2-3-09/01/2022 | PCB-1260 (AROCLOR 1260) | 143 | - | 143 | J | LCSH |
| | PCB-1254 (AROCLOR 1254) | 76.2 | - | 76.2 | J | LCSH |
| SIB-SC-J08-3-4-09/01/2022 | PCB-1260 (AROCLOR 1260) | 109 | - | 109 | J | LCSH |
| | PCB-1254 (AROCLOR 1254) | 80.3 | - | 80.3 | J | LCSH |
| SIB-SC-J08-4-5-09/01/2022 | PCB-1260 (AROCLOR 1260) | 540 | D | 540 | J | LCSH |
| | PCB-1248 (AROCLOR 1248) | 189 | D | 189 | J | LCSH |
| | PCB-1254 (AROCLOR 1254) | 673 | D | 673 | J | LCSH |
| | PCB-1016 (AROCLOR 1016) | 15.6 | DU | 15.6 | UJ | MSL |
| | PCB-1221 (AROCLOR 1221) | 15.6 | DU | 15.6 | UJ | MSL |
| | PCB-1232 (AROCLOR 1232) | 15.6 | DU | 15.6 | UJ | MSL |
| | PCB-1242 (AROCLOR 1242) | 15.6 | DU | 15.6 | UJ | MSL |
| | | | | | | |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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EcoChem Project: C28601-1

July 28, 2023

Approved for Release:

—  —
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of compliance review (EPA Stage 2A) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Joshi | E. Clayton |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|----------------------|------------|--------|-----|--------|---------|
| 22I0179 | SIB-SED-C22-09062022 | 22I0179-01 | SE | ✓ | ✓ | ✓ |
| 22I0179 | SIB-SED-D05-09062022 | 22I0179-02 | SE | ✓ | ✓ | ✓ |
| 22I0179 | SIB-SED-F14-09062022 | 22I0179-03 | SE | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of the data from the analysis of sediment and surface water samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22I0179 | 3 DRET Elutriates | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|---------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | ✓ | Surrogate Compounds |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Reporting Limits |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | ✓ | Target Analyte List |
| 1 | Standard Reference Material (SRM) | | |

✓ Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

¹ Quality control results are discussed below, but no data were qualified.

² Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

Sample SIB-SED-F14-09062022 was used for the MS/MSD analyses. The percent recovery (%R) of Aroclor 1016 was greater than the control limit for the MS/MSD. This compound was not detected in the parent samples; no qualifiers were assigned. The %R of Aroclor 1260 was greater than the control

limit for the MS/MSD. The result in the parent sample was greater than 4x the amount spiked; no qualifiers were assigned.

Standard Reference Material (SRM)

Puget Sound Reference Material was analyzed with each batch. All concentrations were within the advisory limits of 41 – 180 ug/Kg.

Field Duplicates

No field duplicates were submitted with this SDG.

Reporting Limits

Several samples were analyzed at dilutions due to the high concentration of some target analytes. Reporting limits were adjusted accordingly. Some reporting limits for non-detected analytes were greater than the QAPP-required reporting limits.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the noted exceptions, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, SRM, and MS/MSD recoveries. Precision was acceptable based on the LCS/LCSD and MS/MSD RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

HGL – Swan Island Basin

Total Metals by Method 6020B

Total Mercury by Method 7471B

This report documents the review of the data from the analysis of sediment samples and the associated laboratory and field quality control (QC) samples. All data received a compliance screening level of review (EPA Stage 2A). The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22I0179 | 3 Sediment | EPA Stage 2A |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a compliance level review.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results and laboratory quality control sample results were also verified (10%).

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table:

| | | | |
|---|---|---|-----------------------|
| ✓ | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | Method Blanks | 1 | Field Duplicates |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples | ✓ | Reporting Limits |
| 1 | Matrix Spikes (MS) | ✓ | Target Analyte List |

✓ *Method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

¹ *Quality control results are discussed below, but no data were qualified.*

² *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Field Blanks

No field blanks were submitted with this SDG.

Matrix Spikes

Matrix spike/matrix spike duplicate samples were not reported with this analytical data set. Accuracy was evaluated from the laboratory control samples.

Laboratory Duplicates

Laboratory duplicate samples were not reported with this analytical data set. Precision was not evaluated.

Field Duplicates

Field duplicates were not submitted with this analytical data set. Precision was not evaluated.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample recoveries. Precision was not evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|-------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------|------------|---------|-------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | ARSENIC | 5.83 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | CADMIUM | 0.47 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | CHROMIUM, TOTAL | 32.2 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | COPPER | 69.6 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | LEAD | 42.6 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW6020B | ZINC | 224 | mg/kg | D | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW7471B | MERCURY | 0.276 | mg/kg | | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 38.3 | ug/kg | | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 110 | ug/kg | | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 127 | ug/kg | | | | ✓ |
| SIB-SED-C22-09062022 | 22I0179-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | ARSENIC | 4.61 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | CADMIUM | 0.28 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | CHROMIUM, TOTAL | 21.8 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | COPPER | 47.6 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | LEAD | 26 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW6020B | ZINC | 124 | mg/kg | D | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW7471B | MERCURY | 0.241 | mg/kg | | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | Aroclor 1262 | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/kg | U | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 40 | ug/kg | | | | ✓ |
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 27.3 | ug/kg | | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------|------------|---------|--------------------------|--------|-------|----------|-----------------|-----------|------------------------------------|
| SIB-SED-D05-09062022 | 22I0179-02 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | ARSENIC | 3.34 | mg/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | CADMIUM | 0.11 | mg/kg | D J | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | CHROMIUM, TOTAL | 21.7 | mg/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | COPPER | 36.1 | mg/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | LEAD | 7.28 | mg/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW6020B | ZINC | 79.5 | mg/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW7471B | MERCURY | 0.0223 | mg/kg | J | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | Aroclor 1262 | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1016 (AROCOLOR 1016) | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1221 (AROCOLOR 1221) | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1232 (AROCOLOR 1232) | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1242 (AROCOLOR 1242) | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1248 (AROCOLOR 1248) | | ug/kg | D U | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1254 (AROCOLOR 1254) | 170 | ug/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1260 (AROCOLOR 1260) | 597 | ug/kg | D | | | ✓ |
| SIB-SED-F14-09062022 | 22I0179-03 | SW8082A | PCB-1268 (AROCOLOR 1268) | | ug/kg | D U | | | ✓ |
| SIB-SED-D05-09062022 | Calc | CALC | SUM OF AROCLORS | 71.9 | ug/kg | | | | ✓ |
| SIB-SED-F14-09062022 | Calc | CALC | SUM OF AROCLORS | 812 | ug/kg | | | | ✓ |
| SIB-SED-C22-09062022 | Calc | CALC | SUM OF AROCLORS | 279 | ug/kg | | | | ✓ |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22I0179 |
| Laboratory: ARI | Date: 8/18/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.22.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|----------------------|----------------------|-------------------------------|--------|
| SIB-SED-C22-09062022 | 22I0179-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SED-D05-09062022 | 22I0179-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SED-F14-09062022 | 22I0179-03 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The internal standard areas were within limits except for internal standard HBBP which is out of control low on one column for 22I179-01, -02. The data was reported from the column in control. All this has been noted but falls outside of a 2A validation.

The three samples reported in this SDG are associated with the DRET extraction and the laboratory reported the combined metals analyte list for surface water and sediment. This combined list is not inconsistent with the end use of the data and all reported metals results are considered usable.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury was frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples in this SDG are intended to support DRET extraction tests and no rinsate blanks were collected.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SED-F14-09062022 (Method 8082A). The %R for Aroclor 1016 was above the QC limits in both the MS and the MSD; the sample had no detections of Aroclors associated with Aroclor 1016 and no qualification is required. The MS and MSD showed %R discrepancies for Aroclor 1260; however, the parent sample concentration was >4x the spike concentration and the %R results are not applicable. All RPDs within QAPP control limits. Any Aroclor detection for the parent sample should be qualified J and non-detections should be qualified UJ.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was not performed on this SDG.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|----------------------|----------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SED-C22-09062022 | None required. | | | | | |
| SIB-SED-D05-09062022 | None required. | | | | | |
| SIB-SED-F14-09062022 | None required. | | | | | |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|---|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 22I0188 |
| Laboratory: ARI | Date: 6/15/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (7.7.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|----------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-E02-0-1-09/02/2022 | 22I0188-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E02-1-2-09/02/2022 | 22I0188-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E02-2-3-09/02/2022 | 22I0188-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E02-3-4-09/02/2022 | 22I0188-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E02-4-5-09/02/2022 | 22I0188-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-0-1-09/02/2022 | 22I0188-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-1-2-09/02/2022 | 22I0188-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-2-3-09/02/2022 | 22I0188-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SSC-G01-3-4-09/02/2022 | 22I0188-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-4-5-09/02/2022 | 22I0188-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-5-6-09/02/2022 | 22I0188-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G01-6-6-09/02/2022 | 22I0188-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-53-09/02/2022 | 22I0188-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I00-0-1-09/02/2022 | 22I0188-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C37-0-1-09/03/2022 | 22I0188-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C37-1-2-09/03/2022 | 22I0188-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C37-2-3-09/03/2022 | 22I0188-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C37-3-4-09/03/2022 | 22I0188-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-0-1-09/03/2022 | 22I0188-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-1-2-09/03/2022 | 22I0188-20 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-2-3-09/03/2022 | 22I0188-21 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-3-4-09/03/2022 | 22I0188-22 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-4-5-09/03/2022 | 22I0188-23 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F37-5-5-09/03/2022 | 22I0188-24 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-54-09/03/2022 | 22I0188-25 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-0-1-09/03/2022 | 22I0188-26 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-1-2-09/03/2022 | 22I0188-27 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-2-3-09/03/2022 | 22I0188-28 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-3-4-09/03/2022 | 22I0188-29 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-4-5-09/03/2022 | 22I0188-30 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-5-6-09/03/2022 | 22I0188-31 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-6-7-09/03/2022 | 22I0188-32 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-7-8-09/03/2022 | 22I0188-33 | PCB Aroclors and Total Metals/Mercury | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-D02-8-9-09/03/2022 | 22I0188-34 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D02-9-9.3-09/03/2022 | 22I0188-35 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-0-1-09/03/2022 | 22I0188-36 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-1-2-09/03/2022 | 22I0188-37 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-2-3-09/03/2022 | 22I0188-38 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-3-4-09/03/2022 | 22I0188-39 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-4-5-09/03/2022 | 22I0188-40 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-5-6-09/03/2022 | 22I0188-41 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-6-7-09/03/2022 | 22I0188-42 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-7-8-09/03/2022 | 22I0188-43 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-8-9-09/03/2022 | 22I0188-44 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-9-10-09/03/2022 | 22I0188-45 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-10-11-09/03/2022 | 22I0188-46 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-11-12-09/03/2022 | 22I0188-47 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-12-13-09/03/2022 | 22I0188-48 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-13-14-09/03/2022 | 22I0188-49 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H01-14-14.6-09/03/2022 | 22I0188-50 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-55-09/03/2022 | 22I0188-51 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-0-1-09/04/2022 | 22I0188-52 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-1-2-09/04/2022 | 22I0188-53 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-2-3-09/04/2022 | 22I0188-54 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-3-4-09/04/2022 | 22I0188-55 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-4-5-09/04/2022 | 22I0188-56 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-5-6-09/04/2022 | 22I0188-57 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-6-7-09/04/2022 | 22I0188-58 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-7-8-09/04/2022 | 22I0188-59 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-8-9-09/04/2022 | 22I0188-60 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B04-9-9.8-09/04/2022 | 22I0188-61 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-56-09/04/2022 | 22I0188-62 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-0-1-09/04/2022 | 22I0188-63 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-1-2-09/04/2022 | 22I0188-64 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-2-3-09/04/2022 | 22I0188-65 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-3-4-09/04/2022 | 22I0188-66 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-4-5-09/04/2022 | 22I0188-67 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-5-6-09/04/2022 | 22I0188-68 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-6-7-09/04/2022 | 22I0188-69 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-7-8-09/04/2022 | 22I0188-70 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-8-9-09/04/2022 | 22I0188-71 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-9-10-09/04/2022 | 22I0188-72 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B05-10-10.3-09/04/2022 | 22I0188-73 | PCB Aroclors and Total Metals/Mercury | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-O07-0-1-09/04/2022 | 22I0188-74 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O07-1-2-09/04/2022 | 22I0188-75 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O07-2-3-09/04/2022 | 22I0188-76 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O07-3-4-09/04/2022 | 22I0188-77 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B07-0-1-09/05/2022 | 22I0188-78 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-B06-0-1-09/05/2022 | 22I0188-79 | PCB Aroclors and Total Metals/Mercury | Solid |
| FD-57-09/05/2022 | 22I0188-80 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C32-0-1-09/05/2022 | 22I0188-81 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C36-0-1-09/05/2022 | 22I0188-82 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E02-0-1-09/02/2022 | 22I0188-83 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The sample(s) were digested and analyzed within the recommended holding times for frozen samples. Mercury samples were frozen to protect the holding times. Internal standard areas were within limits except for HBBP which is out of control low in both columns for samples 22I0188-09 and 22I0188-27 and HBBP is out of control low on one column in samples 22I0188-40, 07,10,11 and 22I0188-13. No qualifiers are required since this is outside the 2A validation scope.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – The method blanks for mercury preparation batches BKL0454 and BKL0609 were contaminated with 0.0128 mg/kg and 0.0071 mg/kg, respectively. All mercury results from samples prepared in batch BKL0454 are above the qualification threshold of 0.064 mg/kg except for the mercury result for sample SIB-SC-B05-1-2-09/04/2022; this result should be qualified U-MBL.

Qualification: None required.

Rinsate Blanks – All samples in this SDG are associated with rinse blank with rinse blank EB10-09/05/2022 (results reported in SDG 22I0166). The rinse blank was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is required. Lead was detected slightly above the MDL at 0.062 µg/L; based on routine workup factors, this concentration corresponds to a solid matrix concentration of 0.062 mg/kg, leading to a qualification limit of 0.31 mg/kg. All associated lead results are one or more orders of magnitude above the qualification limit and no qualification is necessary.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – Several of the LCS/LCSD had results reported that were not within the QC limits listed by the QAPP. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – PCB Aroclor surrogate decachlorobiphenyl had high %Rs on both columns for samples SIB-SC-G01-0-1-09/02/2022, SIB-SC-B04-3-4-09/04/2022, SIB-SC-B04-4-5-09/04/2022, and FD-56-09/04/2022 and all detected Aroclors reported for those samples should be qualified J; non-detections do not need to be qualified. Surrogate decachlorobiphenyl had a high %R on column 1 for samples SIB-SC-G01-1-2-09/02/2022, SIB-SC-B04-5-6-09/04/2022, SIB-SC-O07-1-2-09/04/2022, SIB-SC-O07-2-3-09/04/2022, and FD-53-09/02/2022. The %R discrepancy for sample SIB-SC-O07-2-3-09/04/2022 was more than 20% above the upper control limit and all detections reported from column 1 should for that sample be qualified J; non-detections do not need to be qualified. All other cases with a single surrogate discrepancy had a %R less than 20% above the upper control limit and qualification is not required in accordance with the HGL consistency memo.

Qualification: Analytes with detections for samples SIB-SC-G01-0-1-09/02/2022, SIB-SC-B04-3-4-09/04/2022, SIB-SC-B04-4-5-09/04/2022, and FD-56-09/04/2022 are qualified J. Detected results reported from column 1 for sample SIB-SC-O07-2-3-09/04/2022 are qualified J.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-C37-3-4-09/03/2022, FD-54-09/03/2022 and SIB-SC-B05-1-2-09/04/2022 for method 8082A; samples SIB-SC-F37-4-5-09/03/2022 and SIB-SC-E02-1-2-09/02/2022 for method 7471B; samples SIB-SC-E02-1-2-09/02/2022, SIB-SC-F37-1-2-09/03/2022 and SIB-SC-B04-3-4-09/04/2022 for method 6020B and samples SIB-SC-E02-1-2-09/02/2022, SIB-SC-F37-1-2-09/03/2022 and SIB-SC-B04-3-4-09/04/2022 for method 6020B UCT-KED.

- Batch BKI0449: The MS performed on sample FD-54-09/03/2022 had a high %R for Aroclor 1260 in the MS; the MSD %R was in control. As only one of the four MS/MSD %Rs were out of control and the discrepancy was less than 20% above the upper control limit, no qualification is necessary.
- Batch BKI0454 for method 8082A, the RPD for Aroclor 1016 in the MS/MSD performed on sample SIB-SC-B05-1-2-09/04/2022 did not meet QC limits; detections should be qualified J and non-detections do not require qualification. No analytes associated with Aroclor 1016 were detected in the parent sample and no qualification is required.
- Batch BKL0609 for method 7471B, the RPD for mercury in the MS/MSD exceeded the QC limits and the %R was extremely low. Detections should be qualified J; as the MS %R was in control and a post-digestion spike was within the control limits, non-detections should be qualified UJ instead of R.
- Batch BKL0035 for method 6020B UCT-KED, the %R for Zinc-66 in the MS exceeded QC limits; as the MSD %R was in control, the %R discrepancy was less than 20% above the upper control limit, and the post-digestion spike met the control limits, no qualification is required.
- Batch BKL0080 for method 6020B UCT-KED, the %R and RPD for Zinc-66 in the MSD exceeded QC limits by more than 20% and the RPD did not meet the precision criteria. Detections should be qualified J-MSH,MSP; non-detections do not need to be qualified.

Qualification: The zinc results reported for samples prepared in batch BKL0080 are qualified J.

Field Duplicate – Field duplicate FD-53-09/02/2022, FD-54-09/03/2022, FD-55-09/03/2022, FD-56-09/04/2022 and FD-57-09/05/2022 with parent samples SIB-SC-G01-1-2-09/02/2022, SIB-SC-F37-1-2-09/03/2022, SIB-SC-H01-2-3-09/03/2022, SIB-SC-B04-3-4-09/04/2022 and SIB-SC-B06-0-1-09/05/2022,

respectively. The following field duplicate results showed discrepancies:

- Field duplicate pair SIB-SC-G01-1-2-09/02/2022 / FD-53-09/02/2022 showed an RPD discrepancy for lead. Lead is qualified J-FDPR in both members of this duplicate pair.
- Field duplicate pair SIB-SC-B04-3-4-09/04/2022 / FD-56-09/04/2022 showed an RPD discrepancy for mercury. Mercury is qualified J-FDPR in both members of this duplicate pair.
- Field duplicate pair SIB-SC-B06-0-1-09/05/2022 / FD-57-09/05/2022 showed an absolute difference discrepancy for cadmium and an RPD discrepancy for lead. Cadmium and lead are qualified J-FDPA and J-FDPR, respectively, in both members of this duplicate pair.

Qualification: The lead results for samples SIB-SC-G01-1-2-09/02/2022 and FD-53-09/02/2022 are qualified J. The mercury results for samples SIB-SC-B04-3-4-09/04/2022 and FD-56-09/04/2022 are qualified J. The cadmium and lead results for samples SIB-SC-B06-0-1-09/05/2022 and FD-57-09/05/2022 are qualified J.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for sample SIB-SC-F37-4-5-09/03/2022 for method 7471B; SIB-SC-E02-1-2-09/02/2022 for methods 7471B, 6020B and 6020B UCT-KED; SIB-SC-F37-1-2-09/03/2022 for method 6020B UCT-KED and SIB-SC-B04-3-4-09/04/2022 for method 6020B UCT-KED. The following discrepancies were noted:

- The laboratory duplicates performed in association with the samples prepared in batches BKL0035 and BKL0080 had high RPDs for arsenic.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg (Aroclors) or mg/kg (metals)):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|-------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-E02-1-2-09/02/2022 | Arsenic | 8.77 | D | J | J | LDPR |
| SIB-SC-E02-2-3-09/02/2022 | Arsenic | 5.05 | D | J | J | LDPR |
| SIB-SC-E02-3-4-09/02/2022 | Arsenic | 3.98 | D | J | J | LDPR |
| SIB-SC-E02-4-5-09/02/2022 | Arsenic | 3.57 | D | J | J | LDPR |
| SIB-SC-G01-0-1-09/02/2022 | Arsenic | 5.17 | D | J | J | LDPR |
| | PCB-1254 (Aroclor 1254) | 178 | D | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 110 | D | J | J | SSH |
| SIB-SC-G01-1-2-09/02/2022 | Arsenic | 5.27 | D | J | J | LDPR |
| | Lead | 59 | D | J | J | FDPR |
| SIB-SC-G01-2-3-09/02/2022 | Arsenic | 4.19 | D | J | J | LDPR |
| SIB-SSC-G01-3-4-09/02/2022 | Arsenic | 3.74 | D | J | J | LDPR |
| SIB-SC-G01-4-5-09/02/2022 | Arsenic | 3.9 | D | J | J | LDPR |
| SIB-SC-G01-5-6-09/02/2022 | Arsenic | 3.83 | D | J | J | LDPR |
| FD-53-09/02/2022 | Arsenic | 5.83 | D | J | J | LDPR |
| | Lead | 124 | D | J | J | FDPR |
| SIB-SC-C37-0-1-09/03/2022 | Arsenic | 5.91 | D | J | J | LDPR |
| SIB-SC-C37-1-2-09/03/2022 | Arsenic | 5.66 | D | J | J | LDPR |
| SIB-SC-C37-2-3-09/03/2022 | Arsenic | 1.91 | D | J | J | LDPR |
| SIB-SC-C37-3-4-09/03/2022 | Arsenic | 1.77 | D | J | J | LDPR |
| SIB-SC-F37-1-2-09/03/2022 | Arsenic | 4.78 | D | J | J | LDPR |
| | Zinc | 119 | D | J | J | MSH,MSP |
| SIB-SC-F37-2-3-09/03/2022 | Arsenic | 8.24 | D | J | J | LDPR |
| | Zinc | 270 | D | J | J | MSH,MSP |
| | Mercury | 0.912 | B | J | J | MSLX,MSP |
| SIB-SC-F37-3-4-09/03/2022 | Arsenic | 6.13 | D | J | J | LDPR |
| | Zinc | 200 | D | J | J | MSH,MSP |
| SIB-SC-F37-4-5-09/03/2022 | Arsenic | 5.19 | D | J | J | LDPR |
| | Zinc | 203 | D | J | J | MSH,MSP |
| | Mercury | 0.164 | B | J | J | MSLX,MSP |
| SIB-SC-F37-5-5.9-09/03/2022 | Arsenic | 5.08 | D | J | J | LDPR |
| | Zinc | 190 | D | J | J | MSH,MSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|---------|-----------|---------------|-----------------|---------------------|--------------|
| FD-54-09/03/2022 | Arsenic | 3.25 | D | J | J | LDPR |
| | Zinc | 100 | D | J | J | MSH,MSP |
| | Mercury | 0.0763 | B | J | J | MSLX,MSP |
| SIB-SC-D02-1-2-09/03/2022 | Arsenic | 3.48 | D | J | J | LDPR |
| | Zinc | 118 | D | J | J | MSH,MSP |
| | Mercury | 0.157 | B | J | J | MSLX,MSP |
| SIB-SC-D02-2-3-09/03/2022 | Arsenic | 1.72 | D | J | J | LDPR |
| | Zinc | 59.8 | D | J | J | MSH,MSP |
| | Mercury | 0.043 | B | J | J | MSLX,MSP |
| SIB-SC-D02-3-4-09/03/2022 | Arsenic | 1.69 | D | J | J | LDPR |
| | Zinc | 53.7 | D | J | J | MSH,MSP |
| | Mercury | 0.0306 | B | UJ | UJ | MBL,MSLX,MSP |
| SIB-SC-D02-4-5-09/03/2022 | Arsenic | 1.99 | D | J | J | LDPR |
| | Zinc | 60.2 | D | J | J | MSH,MSP |
| | Mercury | 0.0518 | B | J | J | MSLX,MSP |
| SIB-SC-D02-5-6-09/03/2022 | Arsenic | 2.16 | D | J | J | LDPR |
| | Zinc | 60.7 | D | J | J | MSH,MSP |
| | Mercury | 0.0495 | B | J | J | MSLX,MSP |
| SIB-SC-H01-0-1-09/03/2022 | Arsenic | 5.17 | D | J | J | LDPR |
| | Zinc | 155 | D | J | J | MSH,MSP |
| | Mercury | 0.398 | B | J | J | MSLX,MSP |
| SIB-SC-H01-1-2-09/03/2022 | Arsenic | 4.55 | D | J | J | LDPR |
| | Zinc | 151 | D | J | J | MSH,MSP |
| | Mercury | 0.184 | B | J | J | MSLX,MSP |
| SIB-SC-H01-2-3-09/03/2022 | Arsenic | 5.03 | D | J | J | LDPR |
| | Zinc | 163 | D | J | J | MSH,MSP |
| | Mercury | 0.259 | B | J | J | MSLX,MSP |
| SIB-SC-H01-3-4-09/03/2022 | Arsenic | 4.76 | D | J | J | LDPR |
| | Zinc | 145 | D | J | J | MSH,MSP |
| | Mercury | 0.369 | B | J | J | MSLX,MSP |
| SIB-SC-H01-4-5-09/03/2022 | Arsenic | 2.78 | D | J | J | LDPR |
| | Zinc | 89.7 | D | J | J | MSH,MSP |
| | Mercury | 0.167 | B | J | J | MSLX,MSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|-------------------------|-----------|---------------|-----------------|---------------------|---------------|
| SIB-SC-H01-5-6-09/03/2022 | Arsenic | 2.29 | D | J | J | LDPR |
| | Zinc | 70.1 | D | J | J | MSH,MSP |
| | Mercury | 0.061 | B | J | J | MSLX,MSP |
| FD-55-09/03/2022 | Arsenic | 5.01 | D | J | J | LDPR |
| | Zinc | 154 | D | J | J | MSH,MSP |
| | Mercury | 0.333 | B | J | J | MSLX,MSP |
| SIB-SC-B04-1-2-09/04/2022 | Arsenic | 5.37 | D | J | J | LDPR |
| | Zinc | 161 | D | J | J | MSH,MSP |
| | Mercury | 0.626 | B | J | J | MSLX,MSP |
| SIB-SC-B04-2-3-09/04/2022 | Arsenic | 3.92 | D | J | J | LDPR |
| | Zinc | 125 | D | J | J | MSH,MSP |
| | Mercury | 0.358 | B | J | J | MSLX,MSP |
| SIB-SC-B04-3-4-09/04/2022 | Mercury | 0.281 | B | J | J | MSLX,MSP,FDPR |
| | PCB-1254 (Aroclor 1254) | 30.8 | D | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 57.8 | D | J | J | SSH |
| SIB-SC-B04-4-5-09/04/2022 | Mercury | 0.359 | B | J | J | MSLX,MSP |
| | PCB-1254 (Aroclor 1254) | 21.5 | D | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 48.1 | D | J | J | SSH |
| SIB-SC-B04-5-6-09/04/2022 | Mercury | 0.259 | B | J | J | MSLX,MSP |
| FD-56-09/04/2022 | Mercury | 0.481 | B | J | J | FDPR |
| | PCB-1254 (Aroclor 1254) | 32.2 | D | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 59.5 | D | J | J | SSH |
| SIB-SC-B05-1-2-09/04/2022 | Mercury | 0.0631 | B | U | U | MBL |
| SIB-SC-O07-2-3-09/04/2022 | PCB-1248 (Aroclor 1248) | 47.2 | D | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 87.4 | D | J | J | SSH |
| SIB-SC-B06-0-1-09/05/2022 | Cadmium | 0.99 | D | J | J | FDPA |
| | Lead | 59 | D | J | J | FDPR |
| FD-57-09/05/2022 | Cadmium | 0.36 | D | J | J | FDPA |
| | Lead | 33.9 | D | J | J | FDPR |



DATA VALIDATION REPORT

HGL – SWAN ISLAND BASIN

Prepared for:

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EcoChem Project: C28601-1

SDG: 22I0202

May 24, 2023

Approved for Release:

A handwritten signature in black ink, appearing to read "Michela Hernandez", written over a horizontal line.

Michela Hernandez
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of full review (EPA Stage 3 and 4) performed on sediment and quality control sample data for the Swan Island Basin project. A complete list of samples is provided in the **Sample Index**.

Samples were analyzed by Analytical Resources, Inc. (ARI), Tukwila, Washington. The analytical methods and EcoChem project chemists are listed in the following table:

| ANALYSIS | METHOD | PRIMARY REVIEW | SECONDARY REVIEW |
|--------------|---------------------|----------------|------------------|
| PCBs | SW8082A | I. Hooper | A. Bodkin |
| Total Metals | SW6020B and SW7471B | E. Clayton | M. Hernandez |

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Uniform Federal Policy Quality Assurance Project Plan Revision 3, Remedial Design Services Swan Island Basin Project Area* (HGL, Pacific Groundwater Group, Mott MacDonald and Bridgewater Group, May 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned a DNR flag (do-not-report) or are rejected (R), the data should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions and reason codes are included as **Appendix A**. A Qualified Data Summary Table is included in **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

Sample Index
Swan Island Basin

| SDG | SAMPLE ID | LAB ID | MATRIX | PCB | Metals | Mercury |
|---------|--------------------------------|------------|--------|-----|--------|---------|
| 22I0202 | SIB-SED-C22-09052022 DRET 1 g/ | 22I0202-01 | W | ✓ | ✓ | ✓ |
| 22I0202 | SIB-SED-C22-09052022 DRET 10 g | 22I0202-02 | W | ✓ | ✓ | ✓ |
| 22I0202 | SIB-SED-D05-09052022 DRET 1 g/ | 22I0202-03 | W | ✓ | ✓ | ✓ |
| 22I0202 | SIB-SED-D05-09052022 DRET 10 g | 22I0202-04 | W | ✓ | ✓ | ✓ |
| 22I0202 | SIB-SED-F14-09052022 DRET 1 g/ | 22I0202-05 | W | ✓ | ✓ | ✓ |
| 22I0202 | SIB-SED-F14-09052022 DRET 10 g | 22I0202-06 | W | ✓ | ✓ | ✓ |

DATA VALIDATION REPORT
HGL – Swan Island Basin
PCB Aroclors by Method SW8082A

This report documents the review of analytical data from the analysis of elutriate samples and the associated laboratory quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the Sample Index for a complete list of samples.

| SDG | NUMBER OF SAMPLES | VALIDATION LEVEL |
|---------|-------------------|------------------|
| 22I0202 | 6 Elutriate | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs reported in the electronic data deliverable (EDD) were verified (100% verification) by comparing the EDD to the hardcopy laboratory data package. Sample results were also verified (10% verification). Laboratory quality control sample results were not included in the EDD.

Results for Aroclor 1262 were reported as chlorobiphenyl in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed in the following table

| | | | |
|---|---|---|--------------------------|
| 1 | Sample Receipt, Preservation, and Holding Times | ✓ | Internal Standards |
| ✓ | Initial Calibration (ICAL) | 1 | Field Duplicates |
| ✓ | Continuing Calibration (CCAL) | ✓ | Target Analyte List |
| ✓ | Laboratory Blanks | ✓ | Reporting Limits |
| 1 | Field Blanks | ✓ | Compound Identification |
| 1 | Surrogate Compounds | ✓ | Reported Results |
| 1 | Matrix Spikes/Matrix Spike Duplicates (MS/MSD) | 1 | Calculation Verification |
| ✓ | Laboratory Control Samples (LCS/LCSD) | | |

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

One or more client identifications as listed on the COC were missing "/" in the date segment when logged in by the laboratory.

Field Blanks

No field blanks were submitted.

Surrogate Compounds

Surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCBP) were added to all samples and laboratory QC samples. The samples were analyzed using dual column confirmation. Percent recovery (%R) values were reported from both columns. No qualifiers were assigned if three of the four %R values were within control limits. No qualifiers are assigned to laboratory QC samples.

For Sample SIB-SED-C22-09/05/2022 DRET 10G/L, the %R value of TCMX was less than the lower control limit on column 1. The %R value for TCMX was within the control limit on column 2 and the %R values of DCBP were within the control limit on both columns. No qualifiers were assigned.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

MS/MSDs were not performed with these samples. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicates (LCS/LCSD).

Field Duplicates

No field duplicates were submitted

Calculation Verification

Calculation verifications were performed for this SDG. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the noted exception, accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference (RPD) values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
HGL – Swan Island Basin
Total Metals by Method 6020B
Total Mercury by Method 7470A

This report documents the review of analytical data from the analysis of DRET samples and the associated laboratory and field quality control (QC) samples. The samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

| SDG | NUMBER OF SAMPLES AND MATRIX | VALIDATION LEVEL |
|---------|------------------------------|------------------|
| 22I0202 | 6 DRET | Stage 4 |

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The method 6020B total quantitation reports were redacted for this SDG. The laboratory was contacted and resubmitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the hardcopy laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

| | | | |
|---|---|---|---|
| 1 | Sample Receipt, Preservation, and Holding Times | 1 | Laboratory Duplicates |
| ✓ | ICP-MS Tune | ✓ | ICP-MS Internal standards |
| ✓ | Initial Calibration | ✓ | Interference Check Samples |
| ✓ | Calibration Verification | 1 | Serial Dilutions |
| ✓ | CRDL Standards | 1 | Field Duplicates |
| 2 | Laboratory Blanks | ✓ | Reporting Limits |
| 1 | Field Blanks | ✓ | Reported Results |
| ✓ | Laboratory Control Samples (LCS) | 1 | Calculation Verification (Full validation only) |
| 1 | Matrix Spike/Matrix Spike Duplicates (MS/MSD) | | |

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of $\leq 6^{\circ}\text{C}$. With the exception noted below, all acceptance criteria were met.

One sample cooler arrived with a temperature less than the lower control limit at -0.5°C . This outlier did not affect any samples; no data were qualified.

Client identifications (ID) listed on the chains-of-custody (COC), were truncated in the laboratory report and EDD.

One or more client identifications as listed on the COC were missing "/" in the date segment when logged in by the laboratory.

Laboratory Blanks

To assess the impact of any blank contaminant on the reported sample results, an action level is established at five times (5x) the concentration reported in the blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U). No action is taken if the sample result is greater than the action level, or for non-detected results. For laboratory blanks that are less than the negative MDL, positive results less than the action level of five times the absolute value of the blank concentration are estimated (J) and non-detects are estimated (UJ) to indicate a potential low bias.

Several instrument blanks were found to have negative responses for mercury that were outside of acceptance criteria for mercury; associated field sample results less than the 5x action levels were qualified as not-detected (U-CBN).

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were not analyzed. Accuracy was evaluated using the LCS and SRM recoveries. Precision was not evaluated.

Laboratory Duplicates

Laboratory duplicate samples were not analyzed. Precision was not evaluated.

Serial Dilutions

No serial dilution analyses were performed.

Field Duplicates

No field duplicates were submitted.

Calculation Verification

Several results were verified by recalculation from the raw data. No calculation or transcription errors were found.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample and SRM %R values. Precision was not evaluated.

Reporting limits were estimated due to instrument blank responses.

All data, as qualified, are acceptable for use.

APPENDIX A

**DATA QUALIFIER DEFINITIONS
AND REASON CODES**

DATA VALIDATION QUALIFIER CODES

Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

| | |
|----|---|
| U | The analyte was analyzed for, but was not detected above the reported sample quantitation limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

The following is an EcoChem qualifier that may also be assigned during the data review process:

| | |
|-----|---|
| DNR | Do not report; a more appropriate result is reported from another analysis or dilution. |
|-----|---|

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E

Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|------------------------|-------------|---|
| Ambient Blank | ABH | Ambient blank result \geq limit of quantitation (LOQ) |
| Ambient Blank | ABHB | Result is judged to be biased high based on associated ambient blank result |
| Ambient Blank | ABL | Ambient blank result $<$ LOQ |
| Analyte Quantitation | ACR | Result above the upper end of the calibrated range |
| Analyte Quantitation | EXC | Result excluded; another data point for this analyte was selected for use (use with X-qualified results) |
| Analyte Quantitation | RTW | Target analyte outside retention time window |
| Analyte Quantitation | PSL | Solid matrix sample with percent solids less than 50% |
| Analyte Quantitation | PSLX | Solid matrix sample with percent solids less than 10% |
| Analyte Quantitation | TR | Result between the detection limit and LOQ |
| Calibration Blank | CBH | Initial or continuing calibration blank result \geq LOQ |
| Calibration Blank | CBHB | Result is judged to be biased high based on associated continuing calibration blank result |
| Calibration Blank | CBL | Initial or continuing calibration blank result $<$ LOQ |
| Calibration Blank | CBN | Negative initial or continuing calibration blank result with absolute value $<$ LOQ |
| Calibration Blank | CBNH | Negative initial or continuing calibration blank result with absolute value \geq LOQ |
| Continuing Calibration | CCCC | Calibration check compound did not meet percent difference (%D) criterion in continuing calibration standard |
| Continuing Calibration | CCVD | Continuing calibration standard did not meet %D criterion |
| Continuing Calibration | CRFL | Continuing calibration RRF below acceptance criterion |
| Continuing Calibration | CSPC | System performance check compound did not meet minimum RRF criterion in continuing calibration |
| Continuing Calibration | CVDX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Confirmation | CF | Confirmation precision exceeded acceptance criterion |
| Cyanide Method | DSH | High-level distillation standard did not meet %D criterion |
| Cyanide Method | DSL | Low-level distillation standard did not meet %D criterion |
| Equipment Blank | EBH | Equipment blank result \geq LOQ |
| Equipment Blank | EBHB | Result is judged to be biased high based on associated equipment blank result |
| Equipment Blank | EBL | Equipment blank result $<$ LOQ |
| Field Duplicate | FDPA | Field duplicate results did not meet absolute difference criterion |
| Field Duplicate | FDPR | Field duplicate results did not meet RPD criterion |
| Holding Time | HTA | Analytical holding time exceeded |
| Holding Time | HTAX | Analytical holding time exceeded, extreme discrepancy |
| Holding Time | HTP | Preparation holding time exceeded |
| Holding Time | HTPX | Preparation holding time exceeded, extreme discrepancy |
| Initial Calibration | ICCC | Calibration check compound did not meet percent relative standard deviation (%RSD) criterion in initial calibration |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

ATTACHMENT E (continued)
Data Qualification Reason Codes

| QC Element | Reason Code | Definition |
|----------------------------------|--------------------|--|
| Initial Calibration | ICLS | Initial calibration low-level standard >LOQ |
| Initial Calibration | ICR2 | Initial calibration r^2 below acceptance criterion |
| Initial Calibration | ICRD | Initial calibration %RSD above acceptance criterion |
| Initial Calibration | ICRX | Initial calibration %RSD above acceptance criterion, extreme discrepancy |
| Initial Calibration | IRFL | Initial calibration RRF below acceptance criterion |
| Initial Calibration | ISPC | System performance check compound did not meet minimum mean RRF criterion in initial calibration |
| Initial Calibration | LQSH | LOQ check standard above acceptance criteria |
| Initial Calibration | LQSL | LOQ check standard below acceptance criteria |
| Initial Calibration | SSVD | Second-source standard did not meet %D criterion |
| Initial Calibration Verification | ICVD | Continuing calibration standard did not meet %D criterion |
| Initial Calibration Verification | ICVX | Continuing calibration standard did not meet %D criterion, extreme discrepancy |
| Interference Check Standard | ICAH | Non-spiked concentration above acceptance criterion in ICSA |
| Interference Check Standard | ICAN | Negative concentration with absolute value above acceptance criterion in ICSA |
| Interference Check Standard | ICHX | Non-spiked concentration above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICNX | Negative concentration with absolute value above acceptance criterion in ICSA, extreme discrepancy |
| Interference Check Standard | ICSH | ICSA or ICSAB spiked analyte with high percent recovery (%R) |
| Interference Check Standard | ICSL | ICSA or ICSAB spiked analyte with low %R |
| Internal Standards | IRH | Internal standard peak area above upper limit |
| Internal Standards | IRL | Internal standard peak area below lower limit |
| Internal Standards | IRLX | Internal standard peak area below lower limit, extreme discrepancy |
| Internal Standards | ISRT | Internal standard retention time outside window |
| Labeled Standards | LSH | Labeled standard %R above acceptance criterion |
| Labeled Standards | LSL | Labeled standard %R below acceptance criterion |
| Labeled Standards | LSLX | Labeled standard %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCLX | LCS and/or LCSD %R below acceptance criterion, extreme discrepancy |
| Laboratory Control Sample | LCSH | LCS and/or LCSD %R above acceptance criterion |
| Laboratory Control Sample | LCSL | LCS and/or LCSD %R below acceptance criterion |
| Laboratory Control Sample | LCSP | LCS/LCSD RPD above acceptance criterion |
| Laboratory Duplicate | LDPA | Laboratory duplicate results did not meet absolute difference criterion |
| Laboratory Duplicate | LDPR | Laboratory duplicate results did not meet RPD criterion |

| | |
|--|--|
| Data Validation, U.S. EPA/DoD Stage 2A and Stage 2B | Document No.: HGL SOP 412.501 (formerly 4.09) |
| | Process Category: Services |
| | Revision No.: 3 |
| | Last Review Date: June 15, 2021 |
| | Next Review Date: June 2023 |

| QC Element | Reason Code | Definition |
|-------------------------------|-------------|---|
| Low-Level Calibration Check | LLCH | Low-level calibration check above the upper limit |
| Low-Level Calibration Check | LLCL | Low-level calibration check below the lower limit |
| Low-Level Calibration Check | LLXL | Low-level calibration check below the lower limit, extreme discrepancy |
| Method Blank | MBH | Method blank result \geq LOQ |
| Method Blank | MBHB | Result is judged to be biased high based on associated method blank result |
| Method Blank | MBL | Method blank result $<$ LOQ |
| Matrix Spike | MSH | MS and/or MSD %R above acceptance criterion |
| Matrix Spike | MSL | MS and/or MSD %R below acceptance criterion |
| Matrix Spike | MSLX | MS and/or MSD %R below acceptance criterion, extreme discrepancy |
| Matrix Spike | MSP | MS/MSD RPD above acceptance criterion |
| Post-Digestion Spike | PDH | Post-digestion spike recovery high |
| Post-Digestion Spike | PDL | Post-digestion spike recovery low |
| Post-Digestion Spike | PDLX | Post-digestion spike recovery low, extreme discrepancy |
| Post-Digestion Spike | PDN | Post-digestion spike not performed or not applicable and serial dilution result not performed or not applicable |
| Sample Delivery and Condition | BUB | Bubbles $>$ 5 millimeters in volatile organic compounds vial |
| Sample Delivery and Condition | DAM | Sample container damaged |
| Sample Delivery and Condition | PRE | Sample not properly preserved |
| Sample Delivery and Condition | TEMP | Sample received at elevated temperature |
| Sample Delivery and Condition | TMPX | Sample received at elevated temperature, extreme discrepancy |
| Serial Dilution | SDIL | Serial dilution did not meet %D criterion |
| Serial Dilution | SDN | Serial dilution not performed |
| Surrogate | SSH | Surrogate %R high |
| Surrogate | SSL | Surrogate %R low |
| Surrogate | SSLX | Surrogate %R low, extreme discrepancy |
| Surrogate | SSN | Surrogate compound not spiked into sample |
| Trip Blank | TBH | Trip blank result \geq LOQ |
| Trip Blank | TBL | Trip blank result $<$ LOQ |
| Validator Judgment | VJ | Validator judgment (see validation narrative) |

ICS = interference check sample
 MS = matrix spike
 MSD = matrix spike duplicate
 QC = quality control
 RPD = relative percent difference
 RRF = relative response factor

APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | LEAD | 10.5 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | ARSENIC | 1.98 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | CADMIUM | | ug/L | D U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | CHROMIUM, TOTAL | 7.19 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | COPPER | 16.1 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW6020B | ZINC | 55.3 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW7470A | MERCURY | 4E-05 | mg/L | J | U | CBN | |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.021 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1254 (AROCLOR 1254) | 0.024 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1248 (AROCLOR 1248) | 0.01 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 1 G/L | 22I0202-01 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | LEAD | 60.4 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | ARSENIC | 7.47 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | CADMIUM | 0.61 | ug/L | D J | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | CHROMIUM, TOTAL | 38.5 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | COPPER | 91.1 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW6020B | ZINC | 254 | ug/L | D | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW7470A | MERCURY | 0.0004 | mg/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.065 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1254 (AROCLOR 1254) | 0.065 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1248 (AROCLOR 1248) | 0.028 | ug/L | | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-C22-09052022 DRET 10 G/L | 22I0202-02 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/L | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------------|------------|---------|-------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | LEAD | 5.11 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | ARSENIC | 1.46 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | CADMIUM | 0.082 | ug/L | D J | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | CHROMIUM, TOTAL | 3.78 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | COPPER | 8.99 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW6020B | ZINC | 22.6 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW7470A | MERCURY | 2E-05 | mg/L | J | U | CBN | |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.003 | ug/L | J | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 1 G/L | 22I0202-03 | SW8082A | PCB-1254 (AROCLOR 1254) | 0.005 | ug/L | J | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | LEAD | 44.5 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | ARSENIC | 7.22 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | CADMIUM | 0.82 | ug/L | D J | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | CHROMIUM, TOTAL | 29.1 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | COPPER | 72.5 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW6020B | ZINC | 188 | ug/L | D | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW7470A | MERCURY | 0.0004 | mg/L | | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1260 (AROCLOR 1260) | 0.019 | ug/L | | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1254 (AROCLOR 1254) | 0.021 | ug/L | | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1268 (AROCLOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1221 (AROCLOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1232 (AROCLOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1248 (AROCLOR 1248) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1016 (AROCLOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-D05-09052022 DRET 10 G/L | 22I0202-04 | SW8082A | PCB-1242 (AROCLOR 1242) | | ug/L | U | | | ✓ |

Qualified Data Summary Table
Swan Island Basin

| SAMPLE ID | LAB ID | METHOD | ANALYTE | RESULT | UNITS | LAB FLAG | DV QUALIFIER | DV REASON | No DV Qualification Required |
|----------------------------------|------------|---------|------------------------|--------|-------|----------|--------------|-----------|------------------------------|
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | LEAD | 1.2 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | ARSENIC | 1.1 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | CADMIUM | | ug/L | D U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | CHROMIUM, TOTAL | 1.89 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | COPPER | 5.48 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW6020B | ZINC | 9.47 | ug/L | D J | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW7470A | MERCURY | | mg/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1260 (AROCOR 1260) | 0.02 | ug/L | | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 1 G/L | 22I0202-05 | SW8082A | PCB-1254 (AROCOR 1254) | 0.014 | ug/L | | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | LEAD | 9.47 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | ARSENIC | 4.01 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | CADMIUM | 0.19 | ug/L | D J | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | CHROMIUM, TOTAL | 13.6 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | COPPER | 40.1 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW6020B | ZINC | 66.2 | ug/L | D | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW7470A | MERCURY | 2E-05 | mg/L | J | U | CBN | |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1254 (AROCOR 1254) | 0.047 | ug/L | | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1268 (AROCOR 1268) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1221 (AROCOR 1221) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1232 (AROCOR 1232) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1248 (AROCOR 1248) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1016 (AROCOR 1016) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | CHLOROBIPHENYL | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1242 (AROCOR 1242) | | ug/L | U | | | ✓ |
| SIB-SED-F14-09052022 DRET 10 G/L | 22I0202-06 | SW8082A | PCB-1260 (AROCOR 1260) | 0.094 | ug/L | | | | ✓ |

HGL Data Validation Review Report

| | |
|--------------------------|------------------------|
| Project Name/Number | PHSS-SIB PDI / DT2002 |
| Data Validation Stage | 4 |
| Validation Subcontractor | EcoChem |
| Laboratory | ARI |
| SDG | 22I0202 |
| HGL Reviewer | Ken Rapuano 6/28/2023 |
| HGL Senior Review | Justin Hersh 7/11/2023 |

General issues: The laboratory reported non-detected results in two different formats in the Stage 2A and Stage 4 data packages; the HGL reviewer confirmed that non-detected results were reported in the project format of MDL U in the EDD.

The HGL reviewer confirmed that reason codes were entered into the dqm_remark column and that all validated_yn cells were populated with "Y".

PCBs as Aroclors – 8082A

Continuing Calibration: The DV report did not discuss the ICV discrepancy affecting Aroclor 1016 on column 2. No results reported from column 2 are associated with the Aroclor 1016 standard and no qualification is required.

Metals – 6020B and 7471B

Calibration Blank: The validator correctly identified the issue with the mercury ICB/CCBs with negative values but applied incorrect qualification. The HGL reviewer revised the mercury qualifiers for samples SIB-SED-C22-09052022 DRET 1 G/L, SIB-SED-D05-09052022 DRET 1 G/L, and SIB-SED-F14-09052022 DRET 10 G/L to J and changed the detect_flag to Y for these results. The HGL reviewer applied a qualifier of UJ-CBN to the non-detected mercury result reported for sample SIB-SED-F14-09052022 DRET 1 G/L.

Analyte Reporting: The laboratory reported a combined list of surface water and sediment contaminants of concern; however, DRET extracts are only required to be analyzed for surface water COCs. Cadmium and lead do not have site CULs and all results for these metals are qualified DNR-EXC.

Qualification Modification Table (all results in mg/L)

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|---------------------------------|------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SED-C22-09052022 DRET 1 G/L | Mercury(1) | 0.000036 | U | J | J | CBN |
| SIB-SED-D05-09052022 DRET 1 G/L | Mercury(1) | 0.000019 | U | J | J | CBN |
| SIB-SED-F14-09052022 DRET 1 G/L | Mercury | 0.000013 | -- | UJ | UJ | CBN |

| Sample | Analyte | Validated Result | Validated Qualifier | Modified Validated Qualifier | Modified Interpreted Qualifier | Modified Final Reason Code |
|----------------------------------|------------|------------------|---------------------|------------------------------|--------------------------------|----------------------------|
| SIB-SED-F14-09052022 DRET 10 G/L | Mercury(1) | 0.000016 | U | J | J | CBN |
| All samples | Cadmium(2) | varies | varies | DNR | DNR | EXC |
| | Lead(2) | varies | varies | DNR | DNR | EXC |

(1) The detect_flag field was also revised from N to Y.

(2) The reportable_result field was also revised from Y to N.

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 22J0289 |
| Laboratory: ARI | Date: 8/4/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|--------------------------|----------------------|-------------------------------|--------|
| SIB-067-TOB-0-1-10142022 | 22J0289-02 | PCB Aroclors and Total Metals | Solid |
| SIB-067-OHW-0-1-10142022 | 22J0289-05 | PCB Aroclors and Total Metals | Solid |
| SIB-067-MLW-0-1-10142022 | 22J0289-08 | PCB Aroclors and Total Metals | Solid |
| SIB-000-TOB-0-1-10172022 | 22J0289-10 | PCB Aroclors and Total Metals | Solid |
| SIB-000-OHW-0-1-10172022 | 22J0289-11 | PCB Aroclors and Total Metals | Solid |
| SIB-001-TOB-0-1-10172022 | 22J0289-12 | PCB Aroclors and Total Metals | Solid |
| SIB-001-OHW-0-1-10172022 | 22J0289-13 | PCB Aroclors and Total Metals | Solid |
| SIB-002-TOB-0-1-10172022 | 22J0289-14 | PCB Aroclors and Total Metals | Solid |
| SIB-002-OHW-0-1-10172022 | 22J0289-15 | PCB Aroclors and Total Metals | Solid |
| SIB-003-TOB-0-1-10172022 | 22J0289-16 | PCB Aroclors and Total Metals | Solid |
| SIB-003-OHW-0-1-10172022 | 22J0289-17 | PCB Aroclors and Total Metals | Solid |
| SIB-004-TOB-0-1-10172022 | 22J0289-18 | PCB Aroclors and Total Metals | Solid |
| SIB-004-OHW-0-1-10172022 | 22J0289-19 | PCB Aroclors and Total Metals | Solid |
| SIB-005-TOB-0-1-10172022 | 22J0289-20 | PCB Aroclors and Total Metals | Solid |
| SIB-005-OHW-0-1-10172022 | 22J0289-21 | PCB Aroclors and Total Metals | Solid |
| SIB-005-MLW-0-1-10172022 | 22J0289-23 | PCB Aroclors and Total Metals | Solid |
| SIB-006-TOB-0-1-10172022 | 22J0289-24 | PCB Aroclors and Total Metals | Solid |
| SIB-006-OHW-0-1-10172022 | 22J0289-25 | PCB Aroclors and Total Metals | Solid |
| SIB-007-TOB-0-1-10172022 | 22J0289-26 | PCB Aroclors and Total Metals | Solid |
| SIB-007-OHW-0-1-10172022 | 22J0289-27 | PCB Aroclors and Total Metals | Solid |
| SIB-008-TOB-0-1-10172022 | 22J0289-28 | PCB Aroclors and Total Metals | Solid |
| SIB-008-OHW-0-1-10172022 | 22J0289-29 | PCB Aroclors and Total Metals | Solid |
| SIB-008-MLW-0-1-10172022 | 22J0289-30 | PCB Aroclors and Total Metals | Solid |
| SIB-009-TOB-0-1-10172022 | 22J0289-31 | PCB Aroclors and Total Metals | Solid |
| SIB-009-OHW-0-1-10172022 | 22J0289-32 | PCB Aroclors and Total Metals | Solid |
| SIB-010-TOB-0-1-10172022 | 22J0289-33 | PCB Aroclors and Total Metals | Solid |
| SIB-010-OHW-0-1-10172022 | 22J0289-34 | PCB Aroclors and Total Metals | Solid |
| SIB-011-TOB-0-1-10172022 | 22J0289-35 | PCB Aroclors and Total Metals | Solid |
| SIB-011-OHW-0-1-10172022 | 22J0289-36 | PCB Aroclors and Total Metals | Solid |
| SIB-012-MLW-0-1-10172022 | 22J0289-37 | PCB Aroclors and Total Metals | Solid |
| SIB-013-MLW-0-1-10172022 | 22J0289-38 | PCB Aroclors and Total Metals | Solid |
| SIB-014-MLW-0-1-10172022 | 22J0289-39 | PCB Aroclors and Total Metals | Solid |
| FD08-10172022 | 22J0289-40 | PCB Aroclors and Total Metals | Solid |

| | | | |
|--------------------------|------------|-------------------------------|-------|
| SIB-068-OHW-0-1-10142022 | 22J0289-41 | PCB Aroclors and Total Metals | Solid |
| SIB-004-MLW-0-1-10172022 | 22J0289-45 | PCB Aroclors and Total Metals | Solid |
| SIB-068-MLW-0-1-10142022 | 22J0289-46 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for 1660 high in closing CCV on one column for SKK0328. Due to high recovery of 1260 in CCV8, CCV6, and CCV4 on one column but presents fine on the second column. Samples affected 289-30,32,40,45 324-3,6,9,10,12,14,15,19,23,28,31 were reported from the column in control for Aroclor 1260 in SKK0333. The CV2 and CCV2 fail for 1260 on both columns this can be possibly attributed to sample oily matrix which suppressed HBBP and inflated DCB and 1260 and CCV4 fails high for 1260 on ZB-5 but presents within recovery limits on ZB-35 so all associated samples will have their 1260 data reported from ZB-35 as primary for SKL0035. Finally, the internal standard areas were within limits except for HBBP which is outside of the control limits on one column in sample 22J0289-40 and 22J0289-13. The data was reported from the column in control. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols.

Qualification: None required.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB02-10102022 (results reported in SDG 22J0175) and EB03-10192022 (results reported in SDG 22J0477) are associated with all sample results reported in this SDG. The rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits except for the LCS/LCSD in method 8082A, the %R did not meet QC limit and the RPD exceeded QC limit. Analytes Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262 and Aroclor 1268 should be qualified J for detections and UJ for non-detections. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: All samples for method 8082A are qualified J for detects and UJ for non-detects for analytes Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262 and Aroclor 1268.

Surrogates – Sample SIB-067-TOB-0-1-10142022 had a high %R for surrogate Decachlorobiphenyl [2C]; however, it had no detections, and no further action is needed. Samples SIB-067-OHW-0-1-10142022, SIB-002-TOB-0-1-10172022, SIB-007-OHW-0-1-10172022, SIB-010-OHW-0-1-10172022 and SIB-012-MLW-0-1-10172022 had a high %R for surrogate Decachlorobiphenyl [2C]. Samples SIB-001-OHW-0-1-10172022, SIB-003-OHW-0-1-10172022 and SIB-013-MLW-0-1-10172022 had a high %R for surrogate Decachlorobiphenyl. Samples SIB-008-TOB-0-1-10172022, SIB-011-TOB-0-1-10172022, SIB-011-OHW-0-1-10172022 and SIB-014-MLW-0-1-10172022 had a high %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]. The detected Aroclor results for these samples should be qualified J with reason code SSH and non-detections should not be qualified.

Qualification: The detected Aroclor results for samples SIB-067-OHW-0-1-10142022, SIB-002-TOB-0-1-10172022, SIB-007-OHW-0-1-10172022, SIB-010-OHW-0-1-10172022, SIB-012-MLW-0-1-10172022, SIB-001-OHW-0-1-10172022, SIB-003-OHW-0-1-10172022, SIB-013-MLW-0-1-10172022, SIB-008-TOB-0-1-10172022, SIB-011-TOB-0-1-10172022, SIB-011-OHW-0-1-10172022 and SIB-014-MLW-0-1-10172022 are qualified J with reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on samples SIB-012-MLW-0-1-10172022, SIB-068-OHW-0-1-10142022, SIB-013-MLW-0-1-10172022 and SIB-014-MLW-0-1-10172022 (Method 8082A). Samples SIB-012-MLW-0-1-10172022, SIB-068-OHW-0-1-10142022 and SIB-013-MLW-0-1-10172022 did not meet QAPP control limits; on the parent sample analytes Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262 and Aroclor 1268 should be qualified J for detections and UJ for non-detections.

Qualification: Samples SIB-012-MLW-0-1-10172022, SIB-068-OHW-0-1-10142022 and SIB-013-MLW-0-1-10172022 are qualified J for detections and UJ for non-detections.

An MS/MSD was performed on samples SIB-012-MLW-0-1-10172022 and SIB-068-MLW-0-1-10142022 (metals). Sample SIB-012-MLW-0-1-10172022 (Methods 6020B and 6020B UCT-KED) did not meet QAPP control limits for Lead, Copper, and Zinc in batch BLA0428. All samples in that batch should have detections be qualified J and non-detections should be qualified UJ for Lead, Copper, and Zinc.

Qualification: For batch BLA0428 samples SIB-000-OHW-0-1-10172022, SIB-000-TOB-0-1-10172022, SIB-001-OHW-0-1-10172022, SIB-001-TOB-0-1-10172022, SIB-002-OHW-0-1-10172022, SIB-002-TOB-0-1-10172022, SIB-003-OHW-0-1-10172022, SIB-003-TOB-0-1-10172022, SIB-004-OHW-0-1-10172022, SIB-004-TOB-0-1-10172022, SIB-005-OHW-0-1-10172022, SIB-005-TOB-0-1-10172022, SIB-012-MLW-0-1-10172022, SIB-067-MLW-0-1-10142022, SIB-067-OHW-0-1-10142022 and SIB-067-TOB-0-1-10142022 have analytes Lead, Copper, and Zinc qualified J.

Field Duplicate – Sample FD08-10172022 is a field duplicate of sample SIB-005-TOB-0-1-10172022. The RPDs of the duplicate pair met the acceptance criteria.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-012-MLW-0-1-10172022 and SIB-068-MLW-0-1-10142022 (metals). The RPDs of the duplicate pairs met the acceptance criteria except for Lead and Arsenic in batch BLA0428 for sample SIB-012-MLW-0-1-10172022.

Qualification: For analytes Lead and Arsenic samples SIB-000-OHW-0-1-10172022, SIB-000-TOB-0-1-10172022, SIB-001-OHW-0-1-10172022, SIB-001-TOB-0-1-10172022, SIB-002-OHW-0-1-10172022, SIB-002-TOB-0-1-10172022, SIB-003-OHW-0-1-10172022, SIB-003-TOB-0-1-

10172022, SIB-004-OHW-0-1-10172022, SIB-004-TOB-0-1-10172022, SIB-005-OHW-0-1-10172022, SIB-005-TOB-0-1-10172022, SIB-012-MLW-0-1-10172022, SIB-067-MLW-0-1-10142022, SIB-067-OHW-0-1-10142022 and SIB-067-TOB-0-1-10142022 are qualified J with reason code LDPR.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-067-TOB-0-1-10142022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Copper | 15.8 | D | 15.8 | J | MSH |
| | Lead | 3.25 | D | 3.25 | J | MSH, LDPR |
| | Zinc | 48.9 | D | 48.9 | J | MSH |
| | Arsenic | 1.89 | D | 1.89 | J | LDPR |
| SIB-067-OHW-0-1-10142022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 4.1 | - | 4.1 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 3.6 | J | 3.6 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Copper | 17.4 | D | 17.4 | J | MSH |
| | Lead | 3.94 | D | 3.94 | J | MSH, LDPR |
| | Zinc | 49.7 | D | 49.7 | J | MSH |
| | Arsenic | 2.27 | D | 2.27 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-067-MLW-0-1-10142022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | 2.3 | J | 2.3 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Copper | 17.9 | D | 17.9 | J | MSH |
| | Lead | 4.96 | D | 4.96 | J | MSH, LDPR |
| | Zinc | 62.3 | D | 62.3 | J | MSH |
| | Arsenic | 2.56 | D | 2.56 | J | LDPR |
| SIB-000-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 19.6 | D, J | 19.6 | J | LCSL, LCSP |
| | Aroclor 1254 | 29.8 | D | 29.8 | J | LCSL, LCSP |
| | Aroclor 1260 | 24.5 | D | 24.5 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 652 | D | 652 | J | MSH |
| | Lead | 54.3 | D | 54.3 | J | MSH, LDPR |
| | Zinc | 402 | D | 402 | J | MSH |
| | Arsenic | 227 | D | 227 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-000-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 16.8 | D, J | 16.8 | J | LCSL, LCSP |
| | Aroclor 1254 | 34.3 | D | 34.3 | J | LCSL, LCSP |
| | Aroclor 1260 | 27.8 | D | 27.8 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 119 | D | 119 | J | MSH |
| | Lead | 35 | D | 35 | J | MSH, LDPR |
| | Zinc | 137 | D | 137 | J | MSH |
| | Arsenic | 46.1 | D | 46.1 | J | LDPR |
| SIB-001-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 30 | D | 30 | J | LCSL, LCSP |
| | Aroclor 1254 | 66.9 | D | 66.9 | J | LCSL, LCSP |
| | Aroclor 1260 | 30.5 | D | 30.5 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 536 | D | 536 | J | MSH |
| | Lead | 39.1 | D | 39.1 | J | MSH, LDPR |
| | Zinc | 463 | D | 463 | J | MSH |
| | Arsenic | 9.69 | D | 9.69 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-001-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 50.3 | D | 50.3 | J | SSH, LCSL, LCSP |
| | Aroclor 1254 | 117 | D | 117 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 120 | D | 120 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 1180 | D | 1180 | J | MSH |
| | Lead | 92.9 | D | 92.9 | J | MSH, LDPR |
| | Zinc | 1070 | D | 1070 | J | MSH |
| | Arsenic | 49.5 | D | 49.5 | J | LDPR |
| | | | | | | |
| SIB-002-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 12.0 | J, D | 12.0 | J | SSH, LCSL, LCSP |
| | Aroclor 1254 | 35.3 | D | 35.3 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 80.0 | D | 80.0 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 267 | D | 267 | J | MSH |
| | Lead | 24.6 | D | 24.6 | J | MSH, LDPR |
| | Zinc | 271 | D | 271 | J | MSH |
| | Arsenic | 6.89 | D | 6.89 | J | LDPR |
| | | | | | | |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-002-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 19.4 | D, J | 19.4 | J | LCSL, LCSP |
| | Aroclor 1254 | 39.2 | D | 39.2 | J | LCSL, LCSP |
| | Aroclor 1260 | 30.7 | D | 30.7 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 152 | D | 152 | J | MSH |
| | Lead | 27.4 | D | 27.4 | J | MSH, LDPR |
| | Zinc | 119 | D | 119 | J | MSH |
| | Arsenic | 3.9 | D | 3.9 | J | LDPR |
| SIB-003-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 16.8 | D, J | 16.8 | J | LCSL, LCSP |
| | Aroclor 1254 | 41 | D | 41 | J | LCSL, LCSP |
| | Aroclor 1260 | 33.4 | D | 33.4 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 495 | D | 495 | J | MSH |
| | Lead | 31.1 | D | 31.1 | J | MSH, LDPR |
| | Zinc | 382 | D | 382 | J | MSH |
| | Arsenic | 6.29 | D | 6.29 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-003-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 82.6 | D | 82.6 | J | SSH, LCSL, LCSP |
| | Aroclor 1254 | 193 | D | 193 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 97.7 | D | 97.7 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 118 | D | 118 | J | MSH |
| | Lead | 90.4 | D | 90.4 | J | MSH, LDPR |
| | Zinc | 128 | D | 128 | J | MSH |
| | Arsenic | 3.18 | D | 3.18 | J | LDPR |
| SIB-004-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 28.2 | D | 28.2 | J | LCSL, LCSP |
| | Aroclor 1254 | 75.8 | D | 75.8 | J | LCSL, LCSP |
| | Aroclor 1260 | 152 | D | 152 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 240 | D | 240 | J | MSH |
| | Lead | 31.1 | D | 31.1 | J | MSH, LDPR |
| | Zinc | 232 | D | 232 | J | MSH |
| | Arsenic | 5.16 | D | 5.16 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-004-OHW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 6.1 | - | 6.1 | J | LCSL, LCSP |
| | Aroclor 1260 | 20.5 | - | 20.5 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Copper | 105 | D | 105 | J | MSH |
| | Lead | 24.7 | D | 24.7 | J | MSH, LDPR |
| | Zinc | 117 | D | 117 | J | MSH |
| | Arsenic | 2.94 | D | 2.94 | J | LDPR |
| | | | | | | |
| SIB-005-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 23 | D | 23 | J | LCSL, LCSP |
| | Aroclor 1254 | 110 | P1, D | 110 | J | LCSL, LCSP |
| | Aroclor 1260 | 213 | D | 213 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 163 | D | 163 | J | MSH |
| | Lead | 37.8 | D | 37.8 | J | MSH, LDPR |
| | Zinc | 178 | D | 178 | J | MSH |
| | Arsenic | 5.63 | D | 5.63 | J | LDPR |
| | | | | | | |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-005-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 36.4 | D | 36.4 | J | LCSL, LCSP |
| | Aroclor 1260 | 45.5 | D | 45.5 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Copper | 62.2 | D | 62.2 | J | MSH |
| | Lead | 27.8 | D | 27.8 | J | MSH, LDPR |
| | Zinc | 88 | D | 88 | J | MSH |
| | Arsenic | 4.44 | D | 4.44 | J | LDPR |
| | | | | | | |
| SIB-005-MLW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | | | | | | |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-006-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 45.3 | D | 45.3 | J | LCSL, LCSP |
| | Aroclor 1254 | 118 | D | 118 | J | LCSL, LCSP |
| | Aroclor 1260 | 73.9 | D | 73.9 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-006-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 20.9 | D | 20.9 | J | LCSL, LCSP |
| | Aroclor 1254 | 32.8 | D | 32.8 | J | LCSL, LCSP |
| | Aroclor 1260 | 76 | P1, D | 76 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-007-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 40 | D | 40 | J | LCSL, LCSP |
| | Aroclor 1254 | 68.4 | D | 68.4 | J | LCSL, LCSP |
| | Aroclor 1260 | 301 | D | 301 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-007-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | 24.0 | D | 24.0 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-008-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 61.7 | D | 61.7 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 226 | D | 226 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-008-OHW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 10 | - | 10 | J | LCSL, LCSP |
| | Aroclor 1260 | 13.6 | - | 13.6 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-008-MLW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 5.1 | - | 5.1 | J | LCSL, LCSP |
| | Aroclor 1254 | 7.8 | - | 7.8 | J | LCSL, LCSP |
| | Aroclor 1260 | 5.6 | - | 5.6 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| SIB-009-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | 214 | D | 214 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-009-OHW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 8.2 | - | 8.2 | J | LCSL, LCSP |
| | Aroclor 1254 | 9.7 | - | 9.7 | J | LCSL, LCSP |
| | Aroclor 1260 | 9.3 | - | 9.3 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-010-TOB-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 38.2 | D | 38.2 | J | LCSL, LCSP |
| | Aroclor 1260 | 41.6 | D | 41.6 | J | LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-010-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 82.1 | D | 82.1 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 120 | D | 120 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-011-TOB-0-1-10172022 | Aroclor 1262 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 349 | D | 349 | J | SSH, LCSL, LCSP |
| | Aroclor 1254 | 1290 | D | 1290 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 1650 | D | 1650 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 50.0 | D, U | < 50.0 | UJ | LCSL, LCSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|----------------------|
| SIB-011-OHW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 155 | D | 155 | J | SSH, LCSL, LCSP |
| | Aroclor 1254 | 354 | D | 354 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 351 | D | 351 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| SIB-012-MLW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1248 | 31.4 | D | 31.4 | J | SSH, LCSL, LCSP, MSH |
| | Aroclor 1254 | 130 | P1, D | 130 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 333 | D | 333 | J | SSH, LCSL, LCSP, MSH |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Copper | 527 | D | 527 | J | MSH |
| | Lead | 125 | D | 125 | J | MSH, LDPR |
| | Zinc | 555 | D | 555 | J | MSH |
| | Arsenic | 10.7 | D | 10.7 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|----------------------|
| SIB-013-MLW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1248 | 42.1 | D | 42.1 | J | SSH, LCSL, LCSP, MSH |
| | Aroclor 1254 | 103 | D | 103 | J | SSH, LCSL, LCSP, MSH |
| | Aroclor 1260 | 114 | D | 114 | J | SSH, LCSL, LCSP, MSH |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| SIB-014-MLW-0-1-10172022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 47.5 | P1, D | 47.5 | J | SSH, LCSL, LCSP |
| | Aroclor 1260 | 139 | D | 139 | J | SSH, LCSL, LCSP |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP |
| FD08-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | 5 | - | 5 | J | LCSL, LCSP |
| | Aroclor 1260 | 3.3 | J | 3.3 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--------------------------|--------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-068-OHW-0-1-10142022 | Aroclor 1262 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1016 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1221 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1232 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1242 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1248 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| | Aroclor 1254 | 17.3 | D, J | 17.3 | J | LCSL, LCSP, MSH |
| | Aroclor 1260 | 44 | D | 44 | J | LCSL, LCSP, MSH |
| | Aroclor 1268 | < 10.0 | D, U | < 10.0 | UJ | LCSL, LCSP, MSL |
| SIB-004-MLW-0-1-10172022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | 4.1 | - | 4.1 | J | LCSL, LCSP |
| | Aroclor 1254 | 4.4 | - | 4.4 | J | LCSL, LCSP |
| | Aroclor 1260 | 2.2 | J | 2.2 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| SIB-068-MLW-0-1-10142022 | Aroclor 1262 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1016 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1221 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1232 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1242 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1248 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1254 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |
| | Aroclor 1260 | 1.4 | J | 1.4 | J | LCSL, LCSP |
| | Aroclor 1268 | < 2.0 | U | < 2.0 | UJ | LCSL, LCSP |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 23B0410 |
| Laboratory: ARI | Date: 6/19/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (7.10.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-D23-10-11-07/06/2022 | 23B0410-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D23-13-14-07/06/2022 | 23B0410-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D23-14-14.8-07/06/2022 | 23B0410-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D22-12-13-07/06/2022 | 23B0410-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D22-13-14-07/06/2022 | 23B0410-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E26-6-7-07/06/2022 | 23B0410-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E26-7-7.8-07/06/2022 | 23B0410-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C23-10-11-07/06/2022 | 23B0410-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C23-11-12-07/06/2022 | 23B0410-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C23-12-13-07/06/2022 | 23B0410-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C33-12-13-07/07/2022 | 23B0410-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C33-13-13.5-07/07/2022 | 23B0410-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C34-13-14-07/07/2022 | 23B0410-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C34-14-14.7-07/07/2022 | 23B0410-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C35-11-12-07/07/2022 | 23B0410-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C35-12-13-07/07/2022 | 23B0410-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E35-13-14-07/08/2022 | 23B0410-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E35-14-14.7-07/08/2022 | 23B0410-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E34-12-13-07/08/2022 | 23B0410-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E34-13-13.8-07/08/2022 | 23B0410-20 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. Internal standard areas were within limits except for HBBP in ternal standard which fails high on one column for samples BLB0425-BLK1, BS1, BSD1 BLB0430-BLK1, BS1, BSD1 BLB0667-BLK1, BS1, BSD1 CCV5 and CCV6. All associated data was reported from the column in control. Also, HBBP fails low on one column for samples 22B0410-1,2,3,4,5,6,11,15,18. All associated data was reported from the column in control. Both issues noted are outside the 2A validation scope, and no further qualification is required.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen until prepped; this is in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. The mercury sample analyses were requested by the client outside of the holding time for frozen mercury samples but by less than a factor of 2. All mercury results should be qualified J-HTA (detections) or UJ-HTA (non-detections).

Qualification: All mercury results are qualified J (detections) or UJ (non-detections).

Method Blanks – The method blank contained mercury at 0.0139 mg/kg, leading to a qualification limit of 0.0695 mg/kg. The mercury results reported for samples SIB-SC-D22-13-14-07/06/2022, SIB-SC-E26-6-7-07/06/2022, SIB-SC-E26-7-7.8-07/06/2022, SIB-SC-C23-12-13-07/06/2022 should be qualified U.

Qualification: None required.

Rinsate Blanks – Equipment rinsate blanks associated with sediment cores were submitted separately from the associated field samples and the EBs associated with the field samples in this SDG were not provided to the validators. In the judgment of the HGL reviewer, rinse blank EB01-07/12/2022 is the first EB collected after the samples with results reported in this SDG; results for this EB were reported in ARI SDG 22G0258. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for surrogates tetrachlorometaxylene for samples SIB-SC-D23-10-11-07/06/2022, SIB-SC-D22-13-14-07/06/2022, SIB-SC-E35-13-14-07/08/2022, and SIB-SC-E34-12-13-07/08/2022 in PCB Aroclors which did not meet QC limits. In all cases, only one of the four surrogate %Rs was out of control and each discrepancy was less than 10% below the lower control limit. In accordance with the HGL consistency memorandum, no qualification is required. Decachlorobiphenyl had a high %R on both columns for sample SIB-SC-C33-12-13-07/07/2022 in PCB Aroclors. All detections should be qualified J and non-detections should not be qualified.

Qualification: Aroclor 1248, Aroclor 1254, and Aroclor 1260 are qualified J for sample SIB-SC-C33-12-13-07/07/2022.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-E26-6-7-07/06/2022 for method 8082A; sample SIB-SC-D23-10-11-07/06/2022 for methods 6020B, 6020B UCT-KED and 7471B. The MSD %R for mercury was above the upper control limit and the discrepancy had a magnitude greater than 20%. The mercury MS/MSD RPD did not meet the precision criterion. All mercury results should be qualified J (detects) or UJ (non-detects), reason code MSH,MSP.

Qualification: All mercury results are qualified J (detects) or UJ (non-detects).

Field Duplicate – Field duplicate was not submitted with the samples in this.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for samples SIB-SC-D23-10-11-07/06/2022 for methods 6020B, 6020B UCT-KED and 7471B. The mercury results in the laboratory duplicate did not meet the absolute difference criterion and all mercury results should be qualified J (detects) or UJ (non-detects), reason code LDPA.

Qualification: All mercury results are qualified J (detects) or UJ (non-detects).

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg (Aroclors) or mg/kg (metals)):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|-------------------------|-----------|---------------|-----------------|---------------------|------------------------|
| SIB-SC-D23-10-11-07/06/2022 | Mercury | 0.137 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-D23-13-14-07/06/2022 | Mercury | 0.109 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-D23-14-14.8-07/06/2022 | Mercury | 0.255 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-D22-12-13-07/06/2022 | Mercury | 0.386 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-D22-13-14-07/06/2022 | Mercury | 0.0177 | H B J | UJ | UJ | HTA,MBL, MSH,MSP,L DPA |
| SIB-SC-E26-6-7-07/06/2022 | Mercury | 0.033 | H B | UJ | UJ | HTA,MBL, MSH,MSP, LDPA |
| SIB-SC-E26-7-7.8-07/06/2022 | Mercury | 0.049 | H B | UJ | UJ | HTA,MBL, MSH,MSP, LDPA |
| SIB-SC-C23-10-11-07/06/2022 | Mercury | 0.0902 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-C23-11-12-07/06/2022 | Mercury | 0.126 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-C23-12-13-07/06/2022 | Mercury | 0.0592 | H B | UJ | UJ | HTA,MBL, MSH,MSP, LDPA |
| SIB-SC-C33-12-13-07/07/2022 | Mercury | 0.221 | H B | J | J | HTA,MSH, MSP,LDPA |
| | PCB-1248 (Aroclor 1248) | 37 | -- | J | J | SSH |
| | PCB-1254 (Aroclor 1254) | 64.8 | -- | J | J | SSH |
| | PCB-1260 (Aroclor 1260) | 86 | -- | J | J | SSH |
| SIB-SC-C33-13-13.5-07/07/2022 | Mercury | 0.247 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-C34-13-14-07/07/2022 | Mercury | 0.242 | H B | J | J | HTA,MSH, MSP,LDPA |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------|-----------|---------------|-----------------|---------------------|----------------------|
| SIB-SC-C34-14-14.7-07/07/2022 | Mercury | 0.194 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-C35-11-12-07/07/2022 | Mercury | 0.207 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-C35-12-13-07/07/2022 | Mercury | 0.173 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-E35-13-14-07/08/2022 | Mercury | 0.125 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-E35-14-14.7-07/08/2022 | Mercury | 0.29 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-E34-12-13-07/08/2022 | Mercury | 0.276 | H B | J | J | HTA,MSH, MSP,LDPA |
| SIB-SC-E34-13-13.8-07/08/2022 | Mercury | 0.0867 | H B | J | J | HTA,MSH, MSP,LDPA |

**Stage 2A Review
Data Quality Control (QC)**

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|--|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 23B0411 |
| Laboratory: ARI | Date: 6/30/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.10.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-E36-13-14-07/08/2022 | 23B0411-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E36-14-14.6-07/08/2022 | 23B0411-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D36-11-12-07/08/2022 | 23B0411-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D36-12-12.7-07/08/2022 | 23B0411-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F31-11-12-07/08/2022 | 23B0411-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F31-12-12.7-07/08/2022 | 23B0411-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F09-6-7-07/14/2022 | 23B0411-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D19-12-13-07/19/2022 | 23B0411-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D19-13-14-07/19/2022 | 23B0411-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D18-6-7-07/19/2022 | 23B0411-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E17-10-11-07/19/2022 | 23B0411-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E17-11-11.8-07/19/2022 | 23B0411-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E19-13-14-07/20/2022 | 23B0411-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E19-14-14.4-07/20/2022 | 23B0411-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F18-6-7-07/21/2022 | 23B0411-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F18-7-8-07/21/2022 | 23B0411-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F18-8-9-07/21/2022 | 23B0411-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E30-7-8-07/23/2022 | 23B0411-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E30-8-9-07/23/2022 | 23B0411-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E30-9-10-07/23/2022 | 23B0411-20 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. It was noted that for PCB Aroclors the initial and continuing calibrations were within method requirements except for CCV2 which fails high for 1260 CCV7,8,9, A, C on once column. All associated data is reported from the column in control. As well as internal standard areas were within limits except for HBBP fails high on one column for samples BLB0710-BLK, BS, BSD BLB0711-BSD, SRM BLC0029-BLK, BS CCV7,8, C. All associated data is reported from the column in control. Finally, the HBBP and BNB fails high on one column for samples BLC0029-BSD BLB0717-BLK, BS, BSD BLC0153-BS. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 222 to 237 days after collection. All mercury results are qualified J (detections) or UJ (non-detections), reason code HTA.

Qualification: All detected mercury results are qualified J (detections) or UJ (non-detections), reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinse Blanks – The samples collected before 7/12/2022 are associated with rinse blank EB01-07122022 (results reported in SDG 22G0258), the samples collected on 7/14/2022 are associated with rinse blank EB02-07132022 (results reported in SDG 22G0258); the samples collected on 7/19/2022 and 7/20/2022 are associated with rinse blank EB03-07202022 (results reported in SDG 22G0343); and the samples collected on 7/21/2022 and 7/23/2022 are associated with rinse blank EB04-07212022 (results reported in SDG 22G0343). Several rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples. Mercury was detected at low concentrations in EB01-07122022 and EB02-07132022. The mercury concentrations detected in these blanks are comparable to the concentration found in the associated method blank and is attributable to aqueous sample preparation. No qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on SIB-SC-E30-7-8-07/23/2022 for method 8082A and sample SIB-SC-E36-13-14-07/08/2022 for methods 6020B, 6020B UCT-KED and 7471B.

- Batch BLB0686 for method 7471B: the %R for Mercury in the MS and the MSD performed on sample SIB-SC-E36-13-14-07/08/2022 was below the QC limits and the RPD was above the control limit; the mercury %R in the MS was <30% and represents an extreme discrepancy. All mercury results should have detections qualified J and non-detections qualified UJ, reason codes MSLX,MSP.

Qualification: All detected mercury results are qualified J (detections) or UJ (non-detections), reason code MSLX,MSP.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for sample SIB-SC-E36-13-14-07/08/2022 for methods 6020B, 6020B UCT-KED and 7471B. All data was within QAPP requirements except for mercury. All mercury results are qualified J (detects) or UJ (non-detects), reason code LDPR.

Qualification: All detected mercury results are qualified J (detections) or UJ (non-detections), reason code LDPR.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------|-----------|---------------|-----------------|---------------------|-------------------|
| SIB-SC-E36-13-14-07/08/2022 | Mercury | 0.372 | H | 0.372 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E36-14-14.6-07/08/2022 | Mercury | 0.214 | H | 0.214 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-D36-11-12-07/08/2022 | Mercury | 0.509 | H | 0.509 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-D36-12-12.7-07/08/2022 | Mercury | 0.186 | H | 0.186 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F31-11-12-07/08/2022 | Mercury | 0.273 | H | 0.273 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F31-12-12.7-07/08/2022 | Mercury | 0.323 | H | 0.323 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F09-6-7-07/14/2022 | Mercury | 0.0611 | H | 0.0611 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-D19-12-13-07/19/2022 | Mercury | 0.122 | H | 0.122 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-D19-13-14-07/19/2022 | Mercury | 0.125 | H | 0.125 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-D18-6-7-07/19/2022 | Mercury | 0.272 | H | 0.272 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E17-10-11-07/19/2022 | Mercury | 0.0128 | H, J | 0.0128 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E17-11-11.8-07/19/2022 | Mercury | - | H, U | - | UJ | HTA,MSLX,MSP,LDPR |
| SIB-SC-E19-13-14-07/20/2022 | Mercury | 0.19 | H | 0.19 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E19-14-14.4-07/20/2022 | Mercury | 0.0265 | H, J | 0.0265 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F18-6-7-07/21/2022 | Mercury | 0.0954 | H | 0.0954 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F18-7-8-07/21/2022 | Mercury | 0.0148 | H, J | 0.0148 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-F18-8-9-07/21/2022 | Mercury | - | H, U | - | UJ | HTA,MSLX,MSP,LDPR |
| SIB-SC-E30-7-8-07/23/2022 | Mercury | 0.0101 | H, J | 0.0101 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E30-8-9-07/23/2022 | Mercury | 0.013 | H, J | 0.013 | J | HTA,MSLX,MSP,LDPR |
| SIB-SC-E30-9-10-07/23/2022 | Mercury | - | H, U | - | UJ | HTA,MSLX,MSP,LDPR |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 23B0412 |
| Laboratory: ARI | Date: 7/7/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.11.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-F21-6-7-07/24/2022 | 23B0412-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F21-7-8-07/24/2022 | 23B0412-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C09-6-7-07/24/2022 | 23B0412-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I06-6-7-07/26/2022 | 23B0412-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I06-7-8-07/26/2022 | 23B0412-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I06-8-9-07/26/2022 | 23B0412-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I08-9-10-07/28/2022 | 23B0412-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I08-10-11-07/28/2022 | 23B0412-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I08-11-12-07/28/2022 | 23B0412-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I05-6-7-07/28/2022 | 23B0412-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I05-7-8-07/28/2022 | 23B0412-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D07-6-7-08/04/2022 | 23B0412-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D07-7-8-08/04/2022 | 23B0412-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D08-6-7-08/04/2022 | 23B0412-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E06-6-7-08/08/2022 | 23B0412-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E06-7-8-08/08/2022 | 23B0412-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E06-8-9-08/08/2022 | 23B0412-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E04-6-7-08/08/2022 | 23B0412-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E04-7-8-08/08/2022 | 23B0412-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E04-8-9-08/08/2022 | 23B0412-20 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E04-9-10-08/08/2022 | 23B0412-21 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F04-6-7-08/11/2022 | 23B0412-22 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F04-7-8-08/11/2022 | 23B0412-23 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F04-8-9-08/11/2022 | 23B0412-24 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F04-9-10-08/11/2022 | 23B0412-25 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F04-10-11-08/11/2022 | 23B0412-26 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. It was noted that for PCB Aroclors the initial and continuing calibrations were within method requirements except for CCV2 which fails high for Aroclor 1260 in SLC0107. The narrative also noted internal standard areas discrepancies on the zb5 column; all associated data is reported from zb35 column as primary. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen until prepped since it was requested outside of the holding time. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 210 to 228 days after collection. All mercury results are qualified J (detects) or UJ (non-detects), reason code HTA.

Qualification: All detected mercury results are qualified J (detections) or UJ (non-detections), reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples collected before 7/24/2022, 7/26/2022 and 7/28/2022 are associated with rinse blank EB05-07262022 (results reported in SDG 22G0436); the samples collected on 8/4/2022 are associated with rinse blank EB06-08042022 (results reported in SDG 22H0215); and the samples collected 8/8/2022 and 8/11/2022 are associated with rinse blank EB07-08092022 (results reported in SDG 22H0279). Several rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required. Equipment blank EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc; due to liquid-to-solid workup factors, these are equivalent to 0.207 mg/kg and 6.17 mg/kg in soil samples. All copper results are greater than the qualification limit of 1.14 mg/kg and all zinc results are greater than the qualification limit of 30.85 mg/kg and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for Tetrachlorometaxylene for samples SIB-SC-I05-6-7-07/28/2022, SIB-SC-E06-6-7-08/08/2022 and SIB-SC-E04-6-7-08/08/2022 which recovered below the lower control limit. The noted discrepancies represented a single discrepancy among the four reported surrogate recoveries and the magnitude of these discrepancies was less than 10%; in accordance with the HGL consistency memorandum, no qualification is required. For sample SIB-SC-E06-8-9-08/08/2022, surrogates Tetrachlorometaxylene and Tetrachlorometaxylene [2C] did not meet QC limits; all results reported for this sample are non-detections and should be qualified UJ, reason code SSL.

Qualification: All results for sample SIB-SC-E06-8-9-08/08/2022 are qualified UJ, reason code SSL.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-F04-10-11-08/11/2022 for methods 6020B, 6020B UCT-KED and 7471B; an MS/MSD was also performed on sample SIB-SC-F21-6-7-07/24/2022 for method 7471B. MS/MSDs were performed on samples SIB-SC-E04-6-7-08/08/2022 and SIB-SC-F04-9-10-08/11/2022 for method 8082A. Both Method 8082A MSs and MSDs had low %Rs for Aroclor 1016. Discrepancies for Aroclor 1016 are also considered to affect Aroclors

1221, 1232, and 1242. All affected Aroclors are non-detections in samples SIB-SC-E04-6-7-08/08/2022 and SIB-SC-F04-9-10-08/11/2022 and should be qualified UJ, reason code MSL.

Qualification: The Aroclor 1016, 1221, 1232, and 1242 results for samples SIB-SC-E04-6-7-08/08/2022 and SIB-SC-F04-9-10-08/11/2022 are qualified UJ, reason code MSL.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for samples SIB-SC-F04-10-11-08/11/2022 for methods 7471B and 6020B; an additional laboratory duplicate was performed using sample SIB-SC-F21-6-7-07/24/2022 for method 7471B.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-F21-6-7-07/24/2022 | Mercury | 0.0151 | H J | 0.0151 | J | HTA |
| SIB-SC-F21-7-8-07/24/2022 | Mercury | 0.029 | H J | 0.029 | J | HTA |
| SIB-SC-C09-6-7-07/24/2022 | Mercury | 0.0556 | H | 0.0556 | J | HTA |
| SIB-SC-I06-6-7-07/26/2022 | Mercury | 1.47 | H | 1.47 | J | HTA |
| SIB-SC-I06-7-8-07/26/2022 | Mercury | 0.168 | H | 0.168 | J | HTA |
| SIB-SC-I06-8-9-07/26/2022 | Mercury | 0.0303 | H | 0.0303 | J | HTA |
| SIB-SC-I08-9-10-07/28/2022 | Mercury | 0.173 | H | 0.173 | J | HTA |
| SIB-SC-I08-10-11-07/28/2022 | Mercury | 0.0321 | H | 0.0321 | J | HTA |
| SIB-SC-I08-11-12-07/28/2022 | Mercury | 0.18 | H | 0.18 | J | HTA |
| SIB-SC-I05-6-7-07/28/2022 | Mercury | 0.0403 | H | 0.0403 | J | HTA |
| SIB-SC-I05-7-8-07/28/2022 | Mercury | 0.00776 | H J | 0.00776 | J | HTA |
| SIB-SC-D07-6-7-08/04/2022 | Mercury | 0.0415 | H | 0.0415 | J | HTA |
| SIB-SC-D07-7-8-08/04/2022 | Mercury | 0.0421 | H | 0.0421 | J | HTA |
| SIB-SC-D08-6-7-08/04/2022 | Mercury | 0.0148 | H J | 0.0148 | J | HTA |
| SIB-SC-E06-6-7-08/08/2022 | Mercury | 0.0887 | H | 0.0887 | J | HTA |
| SIB-SC-E06-7-8-08/08/2022 | Mercury | 0.105 | H | 0.105 | J | HTA |
| SIB-SC-E06-8-9-08/08/2022 | Aroclor 1016 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1221 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1232 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1242 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1248 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1254 | 1.5 | U | 1.5 | UJ | SSL |
| | Aroclor 1260 | 0.6 | U | 0.6 | UJ | SSL |
| | Aroclor 1262 | 0.6 | U | 0.6 | UJ | SSL |
| | Aroclor 1268 | 0.6 | U | 0.6 | UJ | SSL |
| | Mercury | 0.013 | H J | 0.013 | J | HTA |
| SIB-SC-E04-6-7-08/08/2022 | Aroclor 1016 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1221 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1232 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1242 | 1.6 | U | 1.6 | UJ | MSL |
| | Mercury | 0.0126 | H J | 0.0126 | J | HTA |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-E04-7-8-08/08/2022 | Mercury | 0.00554 | H U | 0.00554 | UJ | HTA |
| SIB-SC-E04-8-9-08/08/2022 | Mercury | 0.0337 | H | 0.0337 | J | HTA |
| SIB-SC-E04-9-10-08/08/2022 | Mercury | 0.0271 | H J | 0.0271 | J | HTA |
| SIB-SC-F04-6-7-08/11/2022 | Mercury | 0.0305 | H J | 0.0305 | J | HTA |
| SIB-SC-F04-7-8-08/11/2022 | Mercury | 0.031 | H | 0.031 | J | HTA |
| SIB-SC-F04-8-9-08/11/2022 | Mercury | 0.0242 | H J | 0.0242 | J | HTA |
| SIB-SC-F04-9-10-08/11/2022 | Aroclor 1016 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1221 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1232 | 1.6 | U | 1.6 | UJ | MSL |
| | Aroclor 1242 | 1.6 | U | 1.6 | UJ | MSL |
| | Mercury | 0.034 | H J | 0.034 | J | HTA |
| SIB-SC-F04-10-11-08/11/2022 | Mercury | 0.0231 | H J | 0.0231 | J | HTA |

**Stage 2A Review
Data Quality Control (QC)**

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| Site: Portland Harbor Superfund Site | SDG #: Case 23C0039 |
| Laboratory: ARI | Date: 7/3/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.10.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-C25-11-12-07/11/2022 | 23C0039-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C25-12-13-07/11/2022 | 23C0039-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C28-11-12-07/09/2022 | 23C0039-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C28-12-13-07/09/2022 | 23C0039-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C30-11-12-07/09/2022 | 23C0039-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C30-12-12.6-07/09/2022 | 23C0039-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C31-11-12-07/10/2022 | 23C0039-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-C31-12-12.9-07/10/2022 | 23C0039-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D30-9-10-07/09/2022 | 23C0039-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D30-10-10.5-07/09/2022 | 23C0039-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D31-12-13-07/09/2022 | 23C0039-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D31-13-13.4-07/09/2022 | 23C0039-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E24-11-12-07/12/2022 | 23C0039-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E24-12-13-07/12/2022 | 23C0039-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E25-10-11-07/12/2022 | 23C0039-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E25-11-11.6-07/12/2022 | 23C0039-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E28-6-7-07/10/2022 | 23C0039-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E29-6-6.6-07/10/2022 | 23C0039-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E31-11-12-07/09/2022 | 23C0039-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E31-12-13-07/09/2022 | 23C0039-20 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. It was noted that for PCB Aroclors the Initial and continuing calibrations were within method requirements except for 1660CCV4,6 which fails high for aroclor 1260 on zb5 all associated data is reported from zb35 column as primary for SCL0167. ICV2, CCV4,6,8 fail high for aroclor 1260 on zb5 column. All associated data is reported from zb35 column as primary for SLC0203. The internal standard areas were within limits except for HBBP which fails Low for samples 23C0039-1,2,3,4,7,11,12,13,14,15,16,17,18,19, BLC0102-SRM1, MS1MSD1 CCV1, CCV3, CCV4, CCV5, CCV6 on zb5 column. All associated data is reported from zb35 column as primary for SLC0167. Finally, for PCB Aroclors HBBP fails low on zb5 column so all associated data is reported from zb35 column as primary for samples ICV2, CCV1,3,4,5,6,7,8 and 23C0039-5,6,8,9,10 and SRM1 in SLC0203. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 247 to 249 days after collection. All mercury results reported in this SDG are detections and should be qualified J, reason code HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples collected before 7/12/2022 are associated with rinse blank EB01-07122022 (results reported in SDG 22G0258). Mercury was detected at a low concentration in EB01-07122022; however, the mercury concentration detected in the blank is comparable to the concentration found in the associated method blank and is attributable to aqueous sample preparation. No qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for Tetrachlorometaxylene in sample SIB-SC-E25-10-11-07/12/2022 which did not meet QC limits. The recovery was only slightly below the lower control limit and in accordance with the HGL consistency memorandum, no qualification is required.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-E29-6-6-07/10/2022 for method 8082A and SIB-SC-C25-11-12-07/11/2022 for methods 6020B, 6020B UCT-KED and 7471B. All %Rs and RPDs were within QAPP control limits.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for sample SIB-SC-C25-11-12-07/11/2022 for methods 6020B, 6020B UCT-KED, and 7471B. All data was within QAPP requirements.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes

detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| All samples | Mercury | Varies | -- | Varies | J | HTA |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 23C0042 |
| Laboratory: ARI | Date: 7/6/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.11.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-E32-11-12-07/09/2022 | 23C0042-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E32-12-12.6-07/09/2022 | 23C0042-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F08-6-7-07/14/2022 | 23C0042-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F08-7-8-07/14/2022 | 23C0042-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F08-8-9-07/14/2022 | 23C0042-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F08-9-10-07/14/2022 | 23C0042-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F08-10-11-07/14/2022 | 23C0042-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G06-6-7-07/14/2022 | 23C0042-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G06-7-8-07/14/2022 | 23C0042-09 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. The narrative noted sporadic continuing calibration or IS failures on one of the two analytical columns and that data are reported using a column with acceptable performance. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 238 to 243 days after collection. All mercury results reported in this SDG are detections and should be qualified J, reason code HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples collected before 7/12/2022 are associated with rinse blank EB01-07122022 (results reported in SDG 22G0258), the samples collected on 7/14/2022 are associated with rinse blank EB02-07132022 (results reported in SDG 22G0258). Rinse blank EB02-07132022 was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is

required. Mercury was detected at low concentrations in EB01-07122022 and EB02-07132022. The mercury concentrations detected in these blanks are comparable to the concentration found in the associated method blank and is attributable to aqueous sample preparation. No qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for Tetrachlorometaxylene for sample SIB-SC-E32-12-12.6-07/09/2022. The %R was 43.8%, which is only slightly below the lower control limit of 44% and this discrepancy is considered nominal. No qualification required.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on SIB-SC-G06-7-8-07/14/2022 for method 8082A and sample SIB-SC-E32-11-12-07/09/2022 for methods 6020B, 6020B UCT-KED and 7471B.

- Batch BLC0840 for method 7471B: the %R for Zinc in the MS and the MSD performed on sample SIB-SC-E32-11-12-07/09/2022 was above the QC limits; all zinc results for batch BLB0686 are detections and should be qualified J, reason code MSH.

Qualification: All zinc results are qualified J, reason code MSH.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed in this SDG for sample SIB-SC-E32-11-12-07/09/2022 for methods 6020B and 6020B UCT-KED. All data was within QAPP requirements.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| All samples | Mercury | Varies | H | Varies | J | HTA |
| | Zinc | Varies | D | Varies | J | MSH |

**Stage 4 Review
Data Quality Control (QC)**

| | |
|---|---|
| Site: Portland Harbor Superfund Site | SDG #: Case 23C0251 |
| Laboratory: ARI | Date: 7/7/23 (stage 2A) and 9/14/23 (Stage 4) |
| HydroGeoLogic, Inc. Stage 2A Reviewer: Deanna Valdebenito Stage 4 Validator: Jennifer Chandler Peer Reviewer: Ken Rapuano (9.27.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-D13-6-7-08/02/2022 | 23C0251-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D13-7-8-08/02/2022 | 23C0251-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D14-9-10-08/02/2022 | 23C0251-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D14-10-11-08/02/2022 | 23C0251-04 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D35-18-19-08/04/2022 | 23C0251-05 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-D35-19-19.5-08/04/2022 | 23C0251-06 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E03-6-7-08/17/2022 | 23C0251-07 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E03-7-8-08/17/2022 | 23C0251-08 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E03-8-9-08/17/2022 | 23C0251-09 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E03-9-10-08/17/2022 | 23C0251-10 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F03-12-13-08/18/2022 | 23C0251-11 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F03-13-13.8-08/18/2022 | 23C0251-12 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F02-10-11-08/18/2022 | 23C0251-13 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F02-11-11.8-08/18/2022 | 23C0251-14 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F35-18-19-08/05/2022 | 23C0251-15 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F35-19-19.5-08/05/2022 | 23C0251-16 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E08-6-7-08/05/2022 | 23C0251-17 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-E08-7-8-08/05/2022 | 23C0251-18 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F13-6-7-08/08/2022 | 23C0251-19 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F14-6-7-08/08/2022 | 23C0251-20 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F14-9-10-08/08/2022 | 23C0251-21 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-F14-10-11-08/08/2022 | 23C0251-22 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H02-10-11-08/18/2022 | 23C0251-23 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H02-11-11.6-08/18/2022 | 23C0251-24 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-G02-6-7-08/18/2022 | 23C0251-25 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H08-7-8-07/26/2022 | 23C0251-26 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H08-8-8.3-07/26/2022 | 23C0251-27 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H07-6-7-07/26/2022 | 23C0251-28 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H06-6-7-07/26/2022 | 23C0251-29 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-H08-6-7-07/26/2022 | 23C0251-30 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-M04-6-7-08/23/2022 | 23C0251-31 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-M04-7-7.9-08/23/2022 | 23C0251-32 | PCB Aroclors and Total Metals/Mercury | Solid |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-N00-15-16-08/25/2022 | 23C0251-33 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N00-16-16.8-08/25/2022 | 23C0251-34 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-6-7-08/25/2022 | 23C0251-35 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-7-8-08/25/2022 | 23C0251-36 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-O04-8-9-08/25/2022 | 23C0251-37 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R06-6-7-08/22/2022 | 23C0251-38 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R06-7-8-08/22/2022 | 23C0251-39 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R06-10-11-08/22/2022 | 23C0251-40 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R06-11-11.6-08/22/2022 | 23C0251-41 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R04-7-8-08/22/2022 | 23C0251-42 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R04-8-9-08/22/2022 | 23C0251-43 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R04-12-13-08/22/2022 | 23C0251-44 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R04-13-13.7-08/22/2022 | 23C0251-45 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R02-6-7-08/22/2022 | 23C0251-46 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R02-7-8-08/22/2022 | 23C0251-47 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-R02-8-9-08/22/2022 | 23C0251-48 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N03-6-7-08/10/2022 | 23C0251-49 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N03-7-8-08/10/2022 | 23C0251-50 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-N03-8-8-08/10/2022 | 23C0251-51 | PCB Aroclors and Total Metals/Mercury | Solid |

The following sequential Stage 2A and 4 reviews were performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Analytical Resources, LLC (ARI) performed analyses on sediment samples collected between August 2, 2022, and August 26, 2022. Analyses were performed for polychlorinated biphenyls (PCB) as Aroclors by EPA Method 8082A and Metals and Mercury by EPA Methods 6020B and 7471B. Analyses were performed in accordance with the project Quality Assurance Project Plan (HGL, 2022).

The data were validated in accordance with the following documents:

- Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP), Revision 3; Remedial Design Services, Swan Island Basin Project Area, CERCLA Docket No. 10-2021-001, Portland Harbor Superfund Site Portland, Multnomah County, Oregon (HGL, 2022)
- USEPA National Functional Guidelines for Organic Superfund Analytical Methods Data Review (NFG) (EPA, 2020a)
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (NFG) (EPA, 2020b)
- HGL SOP HGL SOP 412.501 – Data Validation, U.S. EPA Stage 2A and Stage 2B (HGL, 2021)

In some cases, the calibration criteria presented in the QAPP did not correspond to the criteria presented in the laboratory analytical SOPs. In these cases, the laboratory criteria were used to evaluate calibration performance.

The qualifiers defined in General Table 1 of EPA, 2020a and b have been applied to any results requiring qualification as described in this data validation report; the historical site data set uses only the J qualifier for estimated results (ie, does not include the directional J+ and J- qualifiers) and this convention was retained in this DV report. The qualifiers have also been applied as the final qualifier to the electronic data

deliverable (EDD) file provided by the laboratory. Any non-standard qualifiers and informational flags reported by the laboratory in the laboratory qualifier field of this EDD are not included in the final qualifier field. A qualification summary table is provided at the end of this report as Attachment A.

In the text of the data validation report, assigned qualifiers are presented in the format "[qualifier]-[reason code(s)]" for ease of description. When presented in tabular format, the qualifier and the reason codes are presented in the columns named as presented in the EDD. The HGL data validation SOP does not include a reason code for ion abundance ratio discrepancies in labeled standards; the reason code IAR is used as the reason code in such cases.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. The narrative noted sporadic continuing calibration or IS failures on one of the two analytical columns and that data are reported using a column with acceptable performance. The issues noted in the narrative are addressed in the appropriate validation report sections below.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury samples were frozen until prepped since it was requested outside of the holding time. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 222 to 259 days after collection. All mercury results are detections and should be qualified J, reason code HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinse Blanks – The samples collected between 8/2/2022 and 8/6/2022 are associated with rinse blank EB06-08042022 (results reported in SDG 22H0215); the samples collected between 8/8/2022 and 8/11/2022 are associated with rinse blank EB07-08092022 (results reported in SDG 22H0279); the samples collected between 8/16/2022 and 8/21/2022 are associated with rinse blank EB08-08212022 (results reported in SDG 22H0491); and the samples collected 8/22/2022 and 8/26/2022 are associated with rinse blank EB09-08242022 (results reported in SDG 22H0491). Several rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required. Equipment blank EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc; due to liquid-to-solid workup factors, these are equivalent to 0.207 mg/kg and 6.17 mg/kg in soil samples. All copper results are greater than the qualification limit of 1.14 mg/kg and all zinc results are greater than the qualification limit of 30.85 mg/kg and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits except for the LCSD in method 8082A batch BLC0322; for this LCSD, the %Rs for Aroclor 1016 and 1260 were below the QC limit and the RPD exceeded QC limit. All samples prepared in batch BLC0322 should have detected Aroclor results qualified J, reason code LCSL, LCSP and non-detected Aroclor results qualified UJ, reason code LCSL. The affected samples are listed below.

| Client Sample ID | Laboratory Sample ID |
|-------------------------------|----------------------|
| SIB-SC-D13-6-7-08/02/2022 | 23C0251-01 |
| SIB-SC-D13-7-8-08/02/2022 | 23C0251-02 |
| SIB-SC-D14-9-10-08/02/2022 | 23C0251-03 |
| SIB-SC-D14-10-11-08/02/2022 | 23C0251-04 |
| SIB-SC-D35-18-19-08/04/2022 | 23C0251-05 |
| SIB-SC-D35-19-19.5-08/04/2022 | 23C0251-06 |
| SIB-SC-E03-6-7-08/17/2022 | 23C0251-07 |
| SIB-SC-E03-7-8-08/17/2022 | 23C0251-08 |
| SIB-SC-E03-8-9-08/17/2022 | 23C0251-09 |
| SIB-SC-E03-9-10-08/17/2022 | 23C0251-10 |
| SIB-SC-F03-12-13-08/18/2022 | 23C0251-11 |
| SIB-SC-F03-13-13.8-08/18/2022 | 23C0251-12 |
| SIB-SC-F02-10-11-08/18/2022 | 23C0251-13 |
| SIB-SC-F02-11-11.8-08/18/2022 | 23C0251-14 |
| SIB-SC-F35-18-19-08/05/2022 | 23C0251-15 |
| SIB-SC-F35-19-19.5-08/05/2022 | 23C0251-16 |
| SIB-SC-E08-6-7-08/05/2022 | 23C0251-17 |
| SIB-SC-E08-7-8-08/05/2022 | 23C0251-18 |
| SIB-SC-F13-6-7-08/08/2022 | 23C0251-19 |
| SIB-SC-F14-6-7-08/08/2022 | 23C0251-20 |

The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: All samples prepared in batch BLC0322 have detected Aroclor results qualified J, reason code LCSL, LCSP and non-detected Aroclor results qualified UJ, reason code LCSL. The affected samples are listed in the table above.

Surrogates – For sample SIB-SC-E03-6-7-08/17/2022 the %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C] were above the QC limits; detections should be qualified J, reason code SSH, and non-detections should not be qualified. Surrogate Tetrachlorometaxylene had low %Rs for samples SIB-SC-D35-18-19-08/04/2022, SIB-SC-E03-8-9-08/17/2022, SIB-SC-E03-9-10-08/17/2022, SIB-SC-F03-12-13-08/18/2022, SIB-SC-F02-10-11-08/18/2022, SIB-SC-R06-7-8-08/22/2022, and SIB-SC-R04-12-13-08/22/2022; this was the only discrepancy among the four reported surrogate %Rs for each sample and the magnitude of each discrepancy was <10%. In accordance with the HGL consistency memorandum, no qualification is required. Samples SIB-SC-F03-13-13.8-08/18/2022 and SIB-SC-R04-13-13.7-08/22/2022 had low %Rs for surrogates Tetrachlorometaxylene and Tetrachlorometaxylene [2C]; detections should be qualified J and non-detections should be qualified UJ, reason code SSL. For sample SIB-SC-F13-6-7-08/08/2022, all surrogate %Rs were below the QC limits; all detections should be qualified J and non-detections should be qualified UJ, reason code SSL.

Qualification: Sample SIB-SC-E03-6-7-08/17/2022 has analyte Aroclor 1260 qualified J, reason code SSH. All Aroclor results for samples SIB-SC-F03-13-13.8-08/18/2022, SIB-SC-R04-13-13.7-08/22/2022, and SIB-SC-F13-6-7-08/08/2022 are qualified J (detections) or UJ (non-detections), reason code SSL.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on SIB-SC-D14-9-10-08/02/2022 for method 8082A and sample SIB-SC-D13-6-7-08/02/2022, SIB-SC-O04-8-9-08/25/2022 and SIB-SC-N03-8-8-8-08/10/2022 for methods 6020B, 6020B UCT-KED and 7471B.

The MS performed on sample SIB-SC-O04-8-9-08/25/2022 for method 6020B UCT-KED had high %Rs for Copper and Zinc in the MS and the MS/MSD had a high RPD for copper. These discrepancies are associated with all samples prepared in batch BLC0869. should have detections qualified J and non-detections should not be qualified. All associated copper results are detections and should be qualified J, reason code MSH, MSP; all associated zinc results are detections and should be qualified J, reason code MSH. The following samples are affected:

| Client Sample ID | Laboratory Sample ID |
|-------------------------------|----------------------|
| SIB-SC-E08-6-7-08/05/2022 | 23C0251-17 |
| SIB-SC-E08-7-8-08/05/2022 | 23C0251-18 |
| SIB-SC-F13-6-7-08/08/2022 | 23C0251-19 |
| SIB-SC-F14-6-7-08/08/2022 | 23C0251-20 |
| SIB-SC-F14-10-11-08/08/2022 | 23C0251-22 |
| SIB-SC-H02-10-11-08/18/2022 | 23C0251-23 |
| SIB-SC-H02-11-11-6-08/18/2022 | 23C0251-24 |
| SIB-SC-G02-6-7-08/18/2022 | 23C0251-25 |
| SIB-SC-H08-7-8-07/26/2022 | 23C0251-26 |
| SIB-SC-H08-8-8-3-07/26/2022 | 23C0251-27 |
| SIB-SC-H07-6-7-07/26/2022 | 23C0251-28 |
| SIB-SC-H06-6-7-07/26/2022 | 23C0251-29 |
| SIB-SC-H08-6-7-07/26/2022 | 23C0251-30 |
| SIB-SC-M04-6-7-08/23/2022 | 23C0251-31 |
| SIB-SC-M04-7-7-9-08/23/2022 | 23C0251-32 |
| SIB-SC-N00-15-16-08/25/2022 | 23C0251-33 |
| SIB-SC-N00-16-16-8-08/25/2022 | 23C0251-34 |
| SIB-SC-O04-6-7-08/25/2022 | 23C0251-35 |
| SIB-SC-O04-7-8-08/25/2022 | 23C0251-36 |
| SIB-SC-O04-8-9-08/25/2022 | 23C0251-37 |

Qualification: All samples prepared in ICP-MS batch BLC0869 have copper results qualified J, reason code MSH, MSP, and all zinc results qualified J, reason code MSH. The affected samples are listed in the table above.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed using samples SIB-SC-D13-6-7-08/02/2022, SIB-SC-O04-8-9-08/25/2022, and SIB-SC-N03-8-8-8-08/10/2022 for methods 6020B and 7471B. The laboratory duplicate performed using sample SIB-SC-O04-8-9-08/25/2022 did not meet the RPD criteria for lead and copper (results erroneously indicated as being <5x RL on summary sheets). The copper and lead discrepancies are associated with all samples prepared in batch BLC0869. All associated copper and lead results are detections and should be qualified J, reason code LDPR. The following samples are affected:

| Client Sample ID | Laboratory Sample ID |
|-----------------------------|----------------------|
| SIB-SC-E08-6-7-08/05/2022 | 23C0251-17 |
| SIB-SC-E08-7-8-08/05/2022 | 23C0251-18 |
| SIB-SC-F13-6-7-08/08/2022 | 23C0251-19 |
| SIB-SC-F14-6-7-08/08/2022 | 23C0251-20 |
| SIB-SC-F14-10-11-08/08/2022 | 23C0251-22 |
| SIB-SC-H02-10-11-08/18/2022 | 23C0251-23 |
| SIB-SC-H02-11-11-08/18/2022 | 23C0251-24 |
| SIB-SC-G02-6-7-08/18/2022 | 23C0251-25 |
| SIB-SC-H08-7-8-07/26/2022 | 23C0251-26 |
| SIB-SC-H08-8-8.3-07/26/2022 | 23C0251-27 |
| SIB-SC-H07-6-7-07/26/2022 | 23C0251-28 |
| SIB-SC-H06-6-7-07/26/2022 | 23C0251-29 |
| SIB-SC-H08-6-7-07/26/2022 | 23C0251-30 |
| SIB-SC-M04-6-7-08/23/2022 | 23C0251-31 |
| SIB-SC-M04-7-7.9-08/23/2022 | 23C0251-32 |
| SIB-SC-N00-15-16-08/25/2022 | 23C0251-33 |
| SIB-SC-N00-16-16-08/25/2022 | 23C0251-34 |
| SIB-SC-O04-6-7-08/25/2022 | 23C0251-35 |
| SIB-SC-O04-7-8-08/25/2022 | 23C0251-36 |
| SIB-SC-O04-8-9-08/25/2022 | 23C0251-37 |

Qualification: All samples prepared in ICP-MS batch BLC0869 have copper and lead results qualified J, reason code LDPR. The affected samples are listed in the table above.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Combination of both Metals/Mercury and Polychlorinated Biphenyl Congeners: Stage 4

Note: The MDL associated with each Aroclor is the same on both columns. Although non-detected Aroclor results are nominally reported from one of the two columns as designated on the data reporting forms, the impact of QC elements such as calibration, calibration verification, and internal standards are considered not to affect non-detected results if one of the two columns associated with reported ND results is in control. Only detected results reported from a column showing a discrepancy are qualified; results reported from a column in control are not qualified even if the other column shows a discrepancy.

Mass Tuning – Mass tuning was performed before each method 6020B ICal sequence. All analytical sequences were associated with a passing tune check.

Qualification: None required.

Initial Calibration (ICAL) –

PCB: ICALs were analyzed for method 8082A PCB analysis and were within method requirements. All results were reported, and no qualifiers were required.

Metals: Initial calibrations were performed and were within method 6020B and method 7471B requirements.

Qualification: None required.

Second Source Calibration Verification - PCBs: All second source calibration verification standards met the %D ≤20% limit.

Qualification: None required.

Calibration Range Checks – Low-level calibration checks were performed after each metals ICAL. All %Rs met the 50-150% acceptance criteria. High concentration calibration verifications were also performed after each metals ICAL. All %Ds met the %D≤10% limit.

Qualification: None required.

Initial Calibration Verification -

PCB analytical sequences SLC0283, SLC0316, and SLC0367: the Aroclor 1260 %D was outside of the control limits on column zb5 in the ICV. All detected results reported from SLC0283 were bracketed by CCV analyses with acceptable %Ds in both columns. All detected results from SLC0316 were reported from column ZB35. All detected results from SLC0367 were either reported from column ZB35 or were bracketed by CCVs and are qualified based on CCV evaluation below.

Metals: ICVs constituting a second source were performed after each sequence ICAL. ICV %Rs were within the 90-110% windows.

Qualification: None required.

Continuing Calibration Verification (CCV) -

PCB analytical sequence SLC0367: the Aroclor 1260 %D was outside of the control limits on column zb5 in CCV2 and CCV4. All Aroclor 1260 results bracketed by these CCVs were reported from the zb35 column with three exceptions. The detected Aroclor 1260 results for samples SIB-SC-F35-19-19.5-08/05/2022, SIB-SC-F14-6-7-08/08/2022, and SIB-SC-H08-6-7-07/26/2022 should be qualified J-CCVD. A CCV for Aroclor 1248 and for 1254 was included in this sequence and the %Ds were in control in the CCVs bracketing detections of these analytes. In the judgment of the HGL validator, no qualification is required for Aroclor 1254 or 1248 results.

PCB analytical sequence SLC0367: the Aroclor 1248 %D was outside of the control limits on column zb5 in CCV7. All Aroclor 1248 results in this sequence are reported from column zb35 and no qualification is required.

PCB analytical sequence SLC0386: Aroclor 1242 failed low, for CCV1 on column zb5; however, no detected results for this analyte were reported and no qualifiers were required.

Metals: CCVs were performed and all CCVs bracketing sample analyses were within method 6020B and method 7471B requirements.

Qualification: None required.

Initial and Continuing Calibration Blanks: The ICB and CCB results associated with sample analyses were <MDL for all ICP-MS metals analytical sequences. Mercury had a negative concentration with absolute value ≥MDL in CCBs bracketing all sample analyses. Mercury was detected in all samples and the raw results for the following samples were below 5x the absolute value of the bracketing negative CCB concentrations: SIB-SC-E08-6-7-08/05/2022, SIB-SC-E08-7-8-08/05/2022, SIB-SC-F13-6-7-08/08/2022,

SIB-SC-F14-9-10-08/08/2022, SIB-SC-H08-8-8.3-07/26/2022, SIB-SC-H06-6-7-07/26/2022, SIB-SC-N00-15-16-08/25/2022, and SIB-SC-O04-8-9-08/25/2022. The affected results should be qualified J-CBN.

Qualification: The mercury results for samples SIB-SC-E08-6-7-08/05/2022, SIB-SC-E08-7-8-08/05/2022, SIB-SC-F13-6-7-08/08/2022, SIB-SC-F14-9-10-08/08/2022, SIB-SC-H08-8-8.3-07/26/2022, SIB-SC-H06-6-7-07/26/2022, SIB-SC-N00-15-16-08/25/2022, and SIB-SC-O04-8-9-08/25/2022 are qualified J-CBN.

Internal Standards:

PCB: The following IS discrepancies were noted. In all cases, detected sample results were reported from a column with ID area in control. Discrepancies in 1-bromo-2-nitrobenzene (BNB) affect reported results for Aroclors 1016, 1221, 1232, 1242, 1248, and 1254. Discrepancies in hexabromobiphenyl (HBBP) affect reported results for Aroclors 1260, 1262, and 1268. Due to the equivalency of the zb5 and zb35 columns, in the judgment of the HGL validator, non-detected results do not require qualification unless associated with an IS discrepancy on both columns.

| IS | high/low | Sample ID | column with discrepancy | column reported | Sequence reported | qualifiers |
|------|----------|---|-------------------------|-----------------|-------------------|------------|
| HBBP | low | SIB-SC-R04-8-9-08/22/2022 SIB-SC-N03-6-7-08/10/2022 SIB-SC-N03-7-8-08/10/2022 | zb5 | zb35 | SLC0283 | None |
| | low | SIB-SC-R04-12-13-08/22/2022 | zb5 | zb35 | SLC0316 | None |
| | low | SIB-SC-D14-9-10-08/02/2022 SIB-SC-D14-10-11-08/02/2022 SIB-SC-E03-6-7-08/17/2022 SIB-SC-E03-7-8-08/17/2022 SIB-SC-E03-8-9-08/17/2022 SIB-SC-E03-9-10-08/17/2022 SIB-SC-F02-11-11.8-08/18/2022 SIB-SC-E08-6-7-08/05/2022 SIB-SC-H02-10-11-08/18/2022 SIB-SC-H02-11-11.6-08/18/2022 SIB-SC-H08-7-8-07/26/2022 SIB-SC-O04-6-7-08/25/2022 SIB-SC-R06-6-7-08/22/2022 SIB-SC-R06-7-8-08/22/2022 SIB-SC-R06-10-11-08/22/2022 | zb5 | zb35 | SLC0386 | None |
| | low | SIB-SC-G02-6-7-08/18/2022 SIB-SC-M04-6-7-08/23/2022 SIB-SC-N00-15-16-08/25/2022 SIB-SC-N00-16-16.8-08/25/2022 SIB-SC-O04-7-8-08/25/2022 | zb5 | zb35 | SLC0367 | None |
| BNB | high | SIB-SC-D13-6-7-08/02/2022 SIB-SC-D13-7-8-08/02/2022 SIB-SC-F03-13-13.8-08/18/2022 | zb5 | zb35 | SLC0367 | None |
| | high | SIB-SC-R06-11-11.6-08/22/2022 | zb5 | zb35 | SLC0316 | None |
| Both | high | SIB-SC-F14-6-7-08/08/2022 | zb5 | zb35 | SLC0367 | See below |

The detected Aroclor 1254 and 1260 results for sample SIB-SC-F14-6-7-08/08/2022 were reported from column zb5 and are associated with a high IS peak area. Both results should be qualified J-ISH.

Metals: ICP-MS metals ISs could not be evaluated; this data was not presented in a summary form and the %Rs cannot be determined from the raw data.

Qualification: The Aroclor 1254 and 1260 results for sample SIB-SC-F14-6-7-08/08/2022 are qualified J-ISH.

Interference Check Sample:

ICS was performed and was within QAPP requirements.

Qualification: None required.

Confirmation (second column): Detected Aroclor results were confirmed on a second column. The Aroclor 1254 results for samples SIB-SC-D35-19-19.5-08/04/2022 and SIB-SC-F02-10-11-08/18/2022 did not meet the RPD $\leq 40\%$ criterion and should be qualified J-CF.

Qualification: The Aroclor 1254 results for samples SIB-SC-D35-19-19.5-08/04/2022 and SIB-SC-F02-10-11-08/18/2022 are qualified J-CF.

Raw Data Review, Compound Quantitation and Identification, and Calculation and Transcription Verification – Gas chromatograms and retention time windows were examined. Calculations and recalculations were performed on random 10% of the raw data. All results were within acceptable criteria. Aroclor recalculations are presented in Attachment 1 and Metals recalculations are presented in Attachment 2.

Qualification: None required.

Overall Assessment of Data - The data are usable as reported with the qualification applied by the reviewer.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

Commented [KFR1]: Revise when new EDD is available.

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------------------------|-----------|---------------|-----------------|---------------------|-----------------|
| SIB-SC-D13-6-7-08/02/2022 | Mercury | 0.0632 | H | 0.0632 | J | HTA |
| | All detected Aroclors | varies | D or D J | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-D13-7-8-08/02/2022 | Mercury | 0.0743 | H | 0.0743 | J | HTA |
| | All detected Aroclors | varies | D or D J | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-D14-9-10-08/02/2022 | Mercury | 0.0569 | H | 0.0569 | J | HTA |
| | All detected Aroclors | varies | -- | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-D14-10-11-08/02/2022 | Mercury | 0.114 | H | 0.114 | J | HTA |
| | All detected Aroclors | varies | -- | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-D35-18-19-08/04/2022 | Mercury | 0.345 | H | 0.345 | J | HTA |
| | All detected Aroclors | varies | D | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-D35-19-19.5-08/04/2022 | Mercury | 0.201 | H | 0.201 | J | HTA |
| | Aroclor 1254 | 30.8 | P1 D | 30.8 | J | LCSL, LCSP, CF |
| | Aroclor 1260 | 39.3 | D | 39.3 | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-E03-6-7-08/17/2022 | Mercury | 0.479 | H | 0.479 | J | HTA |
| | Aroclor 1260 | 10.7 | -- | 10.7 | J | SSH, LCSL, LCSP |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-E03-7-8-08/17/2022 | Mercury | 0.49 | H | 0.49 | J | HTA |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-E03-8-9-08/17/2022 | Mercury | 0.368 | H | 0.368 | J | HTA |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-E03-9-10-08/17/2022 | Mercury | 0.268 | H | 0.268 | J | HTA |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-F03-12-13-08/18/2022 | Mercury | 0.37 | H | 0.37 | J | HTA |
| | All detected Aroclors | varies | D | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------------------------|-----------|---------------|-----------------|---------------------|------------------|
| SIB-SC-F03-13-13.8-08/18/2022 | Mercury | 0.492 | H | 0.492 | J | HTA |
| | All detected Aroclors | varies | D | varies | J | SSL, LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | SSL, LCSL |
| SIB-SC-F02-10-11-08/18/2022 | Mercury | 0.393 | H | 0.393 | J | HTA |
| | Aroclor 1254 | 30.1 | D | 30.1 | J | LCSL, LCSP, CF |
| | Aroclor 1260 | 35.9 | D | 35.9 | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-F02-11-11.8-08/18/2022 | Mercury | 0.393 | H | 0.393 | J | HTA |
| | Aroclor 1260 | 11.2 | -- | 11.2 | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-F35-18-19-08/05/2022 | Mercury | 0.414 | H | 0.414 | J | HTA |
| | All detected Aroclors | varies | D | varies | J | LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-F35-19-19.5-08/05/2022 | Mercury | 0.428 | H | 0.428 | J | HTA |
| | Aroclor 1254 | 51.6 | D | 51.6 | J | LCSL, LCSP |
| | Aroclor 1260 | 54.1 | D | 54.1 | J | CCVD, LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-E08-6-7-08/05/2022 | Copper | 35.3 | D | 35.3 | J | MSH, MSP, LDPR |
| | Lead | 5.8 | D | 5.8 | J | LDPR |
| | Zinc | 58.7 | D | 58.7 | J | MSH |
| | Mercury | 0.0287 | H | 0.0287 | J | HTA, CBN |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-E08-7-8-08/05/2022 | Copper | 27.5 | D | 27.5 | J | MSH, MSP, LDPR |
| | Lead | 4.55 | D | 4.55 | J | LDPR |
| | Zinc | 56.2 | D | 56.2 | J | MSH |
| | Mercury | 0.0287 | H J | 0.0287 | J | HTA, CBN |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |
| SIB-SC-F13-6-7-08/08/2022 | Copper | 30.8 | D | 30.8 | J | MSH, MSP, LDPR |
| | Lead | 4.98 | J | 4.98 | J | LDPR |
| | Zinc | 63.6 | D | 63.6 | J | MSH |
| | Mercury | 0.0285 | H J | 0.0285 | J | HTA, CBN |
| | All non-detected Aroclors | varies | U | varies | UJ | LCSL |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------------------------|-----------|---------------|-----------------|---------------------|-----------------------|
| SIB-SC-F14-6-7-08/08/2022 | Copper | 32 | D | 32 | J | MSH, MSP, LDPR |
| | Lead | 5.55 | D | 5.55 | J | LDPR |
| | Zinc | 63.4 | D | 63.4 | J | MSH |
| | Mercury | 0.0376 | H | 0.0376 | J | HTA |
| | Aroclor 1254 | 24.3 | D | 24.3 | J | ISH, LCSL, LCSP |
| | Aroclor 1260 | 15.5 | D | 15.5 | J | CCVD, ISH, LCSL, LCSP |
| | All non-detected Aroclors | varies | D U | varies | UJ | LCSL |
| SIB-SC-F14-9-10-08/08/2022 | Mercury | 0.0324 | H | 0.0324 | J | HTA, CBN |
| SIB-SC-F14-10-11-08/08/2022 | Copper | 33 | D | 33 | J | MSH, MSP, LDPR |
| | Lead | 5.15 | D | 5.15 | J | LDPR |
| | Zinc | 63.7 | D | 63.7 | J | MSH |
| | Mercury | 0.081 | H | 0.081 | J | HTA |
| SIB-SC-H02-10-11-08/18/2022 | Copper | 45.4 | D | 45.4 | J | MSH, MSP, LDPR |
| | Lead | 23.4 | D | 23.4 | J | MSH |
| | Zinc | 130 | D | 130 | J | MSH |
| | Mercury | 0.302 | H | 0.302 | J | HTA |
| SIB-SC-H02-11-11.6-08/18/2022 | Copper | 50.2 | D | 50.2 | J | MSH, MSP, LDPR |
| | Lead | 26.1 | D | 26.1 | J | LDPR |
| | Zinc | 143 | D | | J | MSH |
| | Mercury | 0.312 | H | 0.312 | J | HTA |
| SIB-SC-G02-6-7-08/18/2022 | Copper | 31.8 | D | 31.8 | J | MSH, MSP, LDPR |
| | Lead | 22.9 | D | 22.9 | J | LDPR |
| | Zinc | 86.7 | D | 86.7 | J | MSH |
| | Mercury | 0.155 | H | 0.155 | J | HTA |
| SIB-SC-H08-7-8-07/26/2022 | Copper | 28.4 | D | 28.4 | J | MSH, MSP, LDPR |
| | Lead | 4.81 | D | 4.81 | J | LDPR |
| | Zinc | 57.1 | D | 57.1 | J | MSH |
| | Mercury | 0.0483 | H | 0.0483 | J | HTA |
| SIB-SC-H08-8-8.3-07/26/2022 | Copper | 31.6 | D | 31.6 | J | MSH, MSP, LDPR |
| | Lead | 5.11 | D | 5.11 | J | LDPR |
| | Zinc | 60.4 | D | 60.4 | J | MSH |
| | Mercury | 0.0264 | H J | 0.0264 | J | HTA, CBN |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|--------------|-----------|---------------|-----------------|---------------------|----------------|
| SIB-SC-H07-6-7-07/26/2022 | Copper | 25.3 | D | 25.3 | J | MSH, MSP, LDPR |
| | Lead | 3.93 | D | 3.93 | J | LDPR |
| | Zinc | 53.5 | D | 53.5 | J | MSH |
| | Mercury | 0.03 | H | 0.03 | J | HTA |
| SIB-SC-H06-6-7-07/26/2022 | Copper | 23.2 | D | 23.2 | J | MSH, MSP, LDPR |
| | Lead | 4.32 | D | 4.32 | J | LDPR |
| | Zinc | 55.4 | D | 55.4 | J | MSH |
| | Mercury | 0.0215 | H J | 0.0215 | J | HTA, CBN |
| SIB-SC-H08-6-7-07/26/2022 | Copper | 38.4 | D | 38.4 | J | MSH, MSP, LDPR |
| | Lead | 10.1 | D | 10.1 | J | LDPR |
| | Zinc | 65.6 | D | 65.6 | J | MSH |
| | Mercury | 0.0775 | H | 0.0775 | J | HTA |
| | Aroclor 1260 | 9.6 | D J | 9.6 | J | CCVD |
| SIB-SC-M04-6-7-08/23/2022 | Copper | 130 | D | 130 | J | MSH, MSP, LDPR |
| | Lead | 70.2 | D | 70.2 | J | LDPR |
| | Zinc | 289 | D | 289 | J | MSH |
| | Mercury | 0.895 | H | 0.895 | J | HTA |
| SIB-SC-M04-7-7.9-08/23/2022 | Copper | 47.9 | D | 47.9 | J | MSH, MSP, LDPR |
| | Lead | 15.9 | D | 15.9 | J | LDPR |
| | Zinc | 104 | D | 104 | J | MSH |
| | Mercury | 0.181 | H | 0.181 | J | HTA |
| SIB-SC-N00-15-16-08/25/2022 | Copper | 68.6 | D | 68.6 | J | MSH, MSP, LDPR |
| | Lead | 53.2 | D | 53.2 | J | LDPR |
| | Zinc | 238 | D | 238 | J | MSH |
| | Mercury | 0.444 | H | 0.444 | J | HTA |
| SIB-SC-N00-16-16.8-08/25/2022 | Copper | 43.7 | D | 43.7 | J | MSH, MSP, LDPR |
| | Lead | 22.2 | D | 22.2 | J | LDPR |
| | Zinc | 139 | D | 139 | J | MSH |
| | Mercury | 0.202 | H | 0.202 | J | HTA |
| SIB-SC-O04-6-7-08/25/2022 | Copper | 115 | D | 115 | J | MSH, MSP, LDPR |
| | Lead | 20.2 | D | 20.2 | J | LDPR |
| | Zinc | 160 | D | 160 | J | MSH |
| | Mercury | 0.0884 | H | 0.0884 | J | HTA |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------------------------|-----------|---------------|-----------------|---------------------|----------------|
| SIB-SC-O04-7-8-08/25/2022 | Copper | 329 | D | 329 | J | MSH, MSP, LDPR |
| | Lead | 40.5 | D | 40.5 | J | LDPR |
| | Zinc | 344 | D | 344 | J | MSH |
| | Mercury | 0.176 | H | 0.176 | J | HTA |
| SIB-SC-O04-8-9-08/25/2022 | Copper | 43 | D | 43 | J | MSH, MSP, LDPR |
| | Lead | 8.71 | D | 8.71 | J | LDPR |
| | Zinc | 53.9 | D | 53.9 | J | MSH |
| | Mercury | 0.018 | H J | 0.018 | J | HTA, CBN |
| SIB-SC-R06-6-7-08/22/2022 | Mercury | 0.107 | H | 0.107 | J | HTA |
| SIB-SC-R06-7-8-08/22/2022 | Mercury | 0.11 | H | 0.11 | J | HTA |
| SIB-SC-R06-10-11-08/22/2022 | Mercury | 0.0332 | H | 0.0332 | J | HTA |
| SIB-SC-R06-11-11.6-08/22/2022 | Mercury | 0.0411 | H | 0.0411 | J | HTA |
| SIB-SC-R04-7-8-08/22/2022 | Mercury | 0.0995 | H | 0.0995 | J | HTA |
| SIB-SC-R04-8-9-08/22/2022 | Mercury | 0.184 | H | 0.184 | J | HTA |
| SIB-SC-R04-12-13-08/22/2022 | Mercury | 0.314 | H | 0.314 | J | HTA |
| SIB-SC-R04-13-13.7-08/22/2022 | Mercury | 0.157 | H | 0.157 | J | HTA |
| | All non-detected Aroclors | varies | U | varies | UJ | SSL |
| SIB-SC-R02-6-7-08/22/2022 | Mercury | 0.519 | H | 0.519 | J | HTA |
| SIB-SC-R02-7-8-08/22/2022 | Mercury | 0.0917 | H | 0.0917 | J | HTA |
| SIB-SC-R02-8-9-08/22/2022 | Mercury | 0.164 | H | 0.164 | J | HTA |
| SIB-SC-N03-6-7-08/10/2022 | Mercury | 0.371 | H | 0.371 | J | HTA |
| SIB-SC-N03-7-8-08/10/2022 | Mercury | 0.0599 | H | 0.0599 | J | HTA |
| SIB-SC-N03-8-8.8-08/10/2022 | Mercury | 0.0721 | H | 0.0721 | J | HTA |

**Stage 2A - 4 Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: Portland Harbor Superfund Site | SDG #: Case 23C0449 |
| Laboratory: ARI | Date: 7/4/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.11.23) Level IV Reviewer: Jennifer Chandler | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|---------------------------|----------------------|---------------------------------------|--------|
| SIB-SC-G02-0-1-08/18/2022 | 23C0449-01 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-I05-0-1-07/28/2022 | 23C0449-02 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-K03-0-1-07/27/2022 | 23C0449-03 | PCB Aroclors and Total Metals/Mercury | Solid |
| SIB-SC-L09-0-1-08/21/2022 | 23C0449-04 | PCB Aroclors and Total Metals/Mercury | Solid |

The following Stage 2A and 4 reviews were performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Analytical Resources, LLC (ARI) performed analyses of PCB and Metals/Mercury soils collected between July 27, 2022 and August 18, 2022 for polychlorinated biphenyl (PCB) congeners by EPA Method 8082A and Metals and Mercury by EPA Methods 6020B and 7471B. Analyses were performed in accordance with the project Quality Assurance Project Plan (HGL, 2022).

The data were validated in accordance with the following documents:

- Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP), Revision 3; Remedial Design Services, Swan Island Basin Project Area, CERCLA Docket No. 10-2021-001, Portland Harbor Superfund Site Portland, Multnomah County, Oregon (HGL, 2022)
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (NFG) (EPA, 2020)
- HGL SOP HGL SOP 412.501 – Data Validation, U.S. EPA Stage 2A and Stage 2B (HGL, 2021)

In some cases, the calibration criteria presented in the QAPP did not correspond to the criteria presented in the laboratory analytical SOPs. In these cases, the laboratory criteria were used to evaluate calibration performance.

The qualifiers defined in Table 1 of EPA, 2020 have been applied to any results requiring qualification as described in this data validation report; the historical site data set uses only the J qualifier for estimated results (ie, does not include the directional J+ and J– qualifiers) and this convention was retained in this DV report. The qualifiers have also been applied as the final qualifier to the electronic data deliverable (EDD) file provided by the laboratory. Any non-standard qualifiers and informational flags reported by the laboratory in the laboratory qualifier field of this EDD are not included in the final qualifier field. A qualification summary table is provided at the end of this report as Attachment A.

In the text of the data validation report, assigned qualifiers are presented in the format “[qualifier]-[reason code(s)]” for ease of description. When presented in tabular format, the qualifier and the reason codes are presented in the columns named as presented in the EDD. The HGL data validation SOP does not include a reason code for ion abundance ratio discrepancies in labeled standards; the reason code IAR is used as the reason code in such cases.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. The narrative noted sporadic continuing calibration or

IS failures on one of the two analytical columns and that data are reported using a column with acceptable performance. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 226 to 251 days after collection. All mercury results reported in this SDG are detections and should be qualified J, reason code HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – The samples collected on 7/27/2022 and 7/28/2022 are associated with rinse blank EB05-07262022 (results reported in SDG 22G0436), the samples collected on 8/18/2022 and 8/21/2022 are associated with rinse blank EB08-08212022 (results reported in SDG 22H0491). EB05-07262022 was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. The laboratory prepared a standard reference material in each batch. All SRM results met control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for Decachlorobiphenyl for sample SIB-SC-I05-0-1-07/28/2022, which had a %R above the QC limits; although this was the only surrogate discrepancy noted in this sample. Although the magnitude of the discrepancy is >20% and would be used to qualify associated results in accordance with the HGL consistency memorandum, all detections reported for this sample are quantitated off column 2, which had acceptable performance for both surrogates. No qualification required.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on SIB-SC-L09-0-1-08/21/2022 for method 8082A. All LCS/LCSD %Rs and RPDs were within QAPP control limits.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A lab duplicate was not performed with the samples in this SDG.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Combination of both Metals/Mercury and Polychlorinated Biphenyl Congeners: Level IV

Mass Tuning – Mass tuning was performed before the ICal sequence, before each daily analytical sequence, and at the end of each daily analytical sequence. Data was not provided to calculate the resolving power; however, all peaks appeared to be fully resolved and gaussian in form.

Qualification: None required.

Initial Calibration (ICAL) –

PCB: ICALs were analyzed for method 8082A PCB analysis and were within method requirements. All results were reported, and no qualifiers were required.

Metals: Initial calibrations were performed and were within method 6020B and method 7471B requirements.

Qualification: None required.

Continuing Calibration Verification (CCV) -

PCB: CCVs were analyzed for method 8082A PCB analysis. Aroclor 1248 failed high, for CCV1, on column zb5; however, results were reported from the primary column zb35. All results were reported, and no qualifiers were required.

Metals: CCVs were performed and were within method 6020B and method 7471B requirements.

Qualification: None required.

Initial Calibration Verification -

PCB: Aroclor 1254 was outside of the acceptable criteria, high, for ICV 1 on zb5; associated data was reported from column zb35. All results were reported, and no qualifiers were required.

Qualification: None required.

Internal Standards:

PCB: Hexabromobiphenol results were low for SIB-SC-G02-0-1-08/18/2022 on column zb5; however, primary results were reported from column zb35. Therefore, results were reported, and no qualifiers were required.

Hexabromobiphenol results were low for SIB-SC-I05-0-1-07/28/2022 on column zb5; however, primary results were reported from column zb35. Therefore, results were reported, and no qualifiers were required.

Hexabromobiphenol results were low for SIB-SC-L09-0-1-08/21/2022 on column zb5; however, primary results were reported from column zb35. Therefore, results were reported, and no qualifiers were required.

Qualification: None required.

Interference Check Sample:

ICS was performed and was within QAPP requirements.

Qualification: None required.

Raw Data Review, Compound Quantitation and Identification, and Calculation and Transcription Verification – Gas chromatograms and retention time windows were examined. Calculations and Recalculations were performed on random 10% of the raw data. All results were within acceptable criteria.

Qualification: None required.

Overall Assessment of Data - The data are usable as reported with the qualification applied by the reviewer.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-G02-0-1-08/18/2022 | Mercury | 0.212 | H | 0.212 | J | HTA |
| SIB-SC-I05-0-1-07/28/2022 | Mercury | 0.88 | H | 0.88 | J | HTA |
| SIB-SC-K03-0-1-07/27/2022 | Mercury | 0.149 | H | 0.149 | J | HTA |
| SIB-SC-L09-0-1-08/21/2022 | Mercury | 0.067 | H | 0.067 | J | HTA |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0152 |
| Laboratory: ARI | Date: 8/18/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.23.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-D26-12-13-07/11/2022 | 23F0152-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D26-13-13.5-07/11/2022 | 23F0152-02 | PCB Aroclors | Solid |
| SIB-SC-D25-11-12-07/11/2022 | 23F0152-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D25-12-13-07/11/2022 | 23F0152-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C24-11-12-07/11/2022 | 23F0152-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C24-12-13-07/11/2022 | 23F0152-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C24-13-13.4-07/11/2022 | 23F0152-07 | PCB Aroclors | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1254 which fails low in CCV5 on zb5 column. All associated data is reported from zb35 column as primary for SLF0446. Aroclor 1260 fails low in CCV2 on zb5 column. All associated data is reported from zb35 column as primary for SLF0465. All this has been noted but falls outside of a 2A validation.

Due to a misinterpretation of the QAPP tables, the metals analyses included results for chromium. Chromium is not a contaminant of concern for sediment and all chromium results are qualified DNR-EXC.

Qualification: All chromium results are qualified DNR, with reason code EXC.

Sample Delivery and Condition – The samples were trans-shipped from another project laboratory on 6/20/23. All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved. Samples SIB-SC-D26-13-13.5-07/11/2022 and SIB-SC-C24-13-13.4-07/11/2022 had insufficient material to perform metals analyses and were only analyzed for Aroclors.

Qualification: None required.

Holding Times – All analyses were performed on frozen archive samples, which extends the holding time. The holding time for frozen mercury samples is 180 days, and all samples were analyzed for mercury on day 347. All affected mercury results are detections and should be qualified J-HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination, except for the blank associated with method 6020B UCT-KED which contained Zinc (1.4 mg/kg) contamination for batch BLF0536. All sample results were greater than the qualification level, no further qualification is required.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB01-07122022 (results reported in SDG 22G0258) is associated with all sample results reported in this SDG. This EB was free from all contamination with the exception of 0.000026 mg/L (0.026 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on sample SIB-SC-C24-13-13.4-07/11/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on sample SIB-SC-D26-12-13-07/11/2022 (metals) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on sample SIB-SC-D26-12-13-07/11/2022 (metals). The RPDs of the duplicate pair met the acceptance criteria except.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|-------------------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-D26-12-13-07/11/2022 | Mercury | 0.346 | H | 0.346 | J | HTA |
| | Chromium ⁽¹⁾ | 38.1 | D | 38.1 | DNR | EXC |
| SIB-SC-D26-13-13.5-07/11/2022 | None required. | | | | | |
| SIB-SC-D25-11-12-07/11/2022 | Mercury | 0.412 | H | 0.412 | J | HTA |
| | Chromium ⁽¹⁾ | 36.1 | D | 36.1 | DNR | EXC |
| SIB-SC-D25-12-13-07/11/2022 | Mercury | 0.374 | H | 0.374 | J | HTA |
| | Chromium ⁽¹⁾ | 37.6 | D | 37.6 | DNR | EXC |
| SIB-SC-C24-11-12-07/11/2022 | Mercury | 0.04 | H | 0.04 | J | HTA |
| | Chromium ⁽¹⁾ | 26.7 | D | 26.7 | DNR | EXC |
| SIB-SC-C24-12-13-07/11/2022 | Mercury | 0.0654 | H | 0.0654 | J | HTA |
| | Chromium ⁽¹⁾ | 26.7 | D | 26.7 | DNR | EXC |
| SIB-SC-C24-13-13.4-07/11/2022 | None required. | | | | | |

⁽¹⁾ Reportable_result field changed from Yes to No.

**Stage 2A Review
Data Quality Control (QC)**

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|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0167 |
| Laboratory: ARI | Date: 7/31/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.11.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-C11-10-11-07/24/2022 | 23F0167-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C11-11-12-07/24/2022 | 23F0167-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C11-12-13-07/24/2022 | 23F0167-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E33-17-18-07/25/2022 | 23F0167-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E33-18-19-07/25/2022 | 23F0167-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D15-10-11-08/02/2022 | 23F0167-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D15-11-12-08/02/2022 | 23F0167-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D15-12-12.9-08/02/2022 | 23F0167-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E15-9-10-08/02/2022 | 23F0167-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E15-10-11-08/02/2022 | 23F0167-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E15-11-11.8-08/02/2022 | 23F0167-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E13-9-10-08/03/2022 | 23F0167-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E13-10-11-08/03/2022 | 23F0167-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E13-11-12-08/03/2022 | 23F0167-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E14-10-11-08/03/2022 | 23F0167-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E14-11-12-08/03/2022 | 23F0167-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E14-12-12.4-08/03/2022 | 23F0167-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-7-8-08/03/2022 | 23F0167-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D10-8-8.5-08/03/2022 | 23F0167-19 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. The narrative noted sporadic continuing calibration or IS failures on one of the two analytical columns and that data are reported using a column with acceptable performance. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 317 to 327 days after

collection. All mercury results reported in this SDG are detections and should be qualified J, reason code HTA.

Qualification: Mercury results in all samples are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB05-07262022 (results reported in SDG 22G0436) and EB06-08042022 (results reported in SDG 22H0215) are associated with all sample results reported in this SDG. The rinse blank was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Sample SIB-SC-E33-17-18-07/25/2022 had a high %R for surrogate Decachlorobiphenyl [2C]. This is the only surrogate discrepancy in this sample and magnitude of the discrepancy is <20%. In accordance with the HGL consistency memorandum, no qualification required.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-E14-12-12.4-08/03/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

An MS/MSD was performed on sample SIB-SC-C11-10-11-07/24/2022 (metals) and had a low %R for Zinc for batch BLF0376 and an extremely low (<30%) %R for Mercury for batch BLF0377. The mercury MS/MSD also had a high RPD. All samples in this SDG were prepared in the affected batches. All mercury results are detections and should be qualified J, reason code MSLX,MSP; all zinc results are detections and should be qualified J, reason code MSL.

Qualification: All mercury results are qualified J, reason code MSLX,MSP. All zinc results are qualified J, reason code MSL.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on sample SIB-SC-C11-10-11-07/24/2022 (metals). The RPDs of the duplicate pairs met the acceptance criteria except for Zinc and Lead for batch BLF0376. All samples in this SDG are associated with this batch and have detected results for lead and zinc. All lead and zinc results should be qualified J, reason code LDPR.

Qualification: All lead and zinc results are qualified J, with reason code LDPR.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes

detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|--------------|-----------|---------------|-----------------|---------------------|--------------|
| SIB-SC-C11-10-11-07/24/2022 | Zinc | 126 | D | 126 | J | MSL,LDPR |
| | Lead | 22.5 | D | 22.5 | J | LDPR |
| | Mercury | 0.285 | H | 0.285 | J | HTA,MSLX,MSP |
| SIB-SC-C11-11-12-07/24/2022 | Zinc | 87.9 | D | 87.9 | J | MSL,LDPR |
| | Lead | 13.3 | D | 13.3 | J | LDPR |
| | Mercury | 0.204 | H | 0.204 | J | HTA,MSLX,MSP |
| SIB-SC-C11-12-13-07/24/2022 | Zinc | 78.1 | D | 78.1 | J | MSL,LDPR |
| | Lead | 8.94 | D | 8.94 | J | LDPR |
| | Mercury | 0.13 | H | 0.13 | J | HTA,MSLX,MSP |
| SIB-SC-E33-17-18-07/25/2022 | Aroclor 1248 | 11.0 | J, D | 11.0 | J | SSH |
| | Aroclor 1254 | 35.4 | D | 35.4 | J | SSH |
| | Aroclor 1260 | 40.4 | D | 40.4 | J | SSH |
| | Zinc | 161 | D | 161 | J | MSL,LDPR |
| | Lead | 21.8 | D | 21.8 | J | LDPR |
| | Mercury | 0.34 | H | 0.34 | J | HTA,MSLX,MSP |
| SIB-SC-E33-18-19-07/25/2022 | Zinc | 161 | D | 161 | J | MSL,LDPR |
| | Lead | 23.2 | D | 23.2 | J | LDPR |
| | Mercury | 0.297 | H | 0.297 | J | HTA,MSLX,MSP |
| SIB-SC-D15-10-11-08/02/2022 | Zinc | 86.0 | D | 86.0 | J | MSL,LDPR |
| | Lead | 10.9 | D | 10.9 | J | LDPR |
| | Mercury | 0.21 | H | 0.21 | J | HTA,MSLX,MSP |
| SIB-SC-D15-11-12-08/02/2022 | Zinc | 81.5 | D | 81.5 | J | MSL,LDPR |
| | Lead | 9.52 | D | 9.52 | J | LDPR |
| | Mercury | 0.0347 | H | 0.0347 | J | HTA,MSLX,MSP |
| SIB-SC-D15-12-12.9-08/02/2022 | Zinc | 57.7 | D | 57.7 | J | MSL,LDPR |
| | Lead | 3.49 | D | 3.49 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------|-----------|---------------|-----------------|---------------------|--------------|
| SIB-SC-E15-9-10-08/02/2022 | Mercury | 0.0375 | H | 0.0375 | J | HTA,MSLX,MSP |
| | Zinc | 66.7 | D | 66.7 | J | MSL,LDPR |
| | Lead | 5.16 | D | 5.16 | J | LDPR |
| | Mercury | 0.0418 | H | 0.0418 | J | HTA,MSLX,MSP |
| SIB-SC-E15-10-11-08/02/2022 | Zinc | 60.9 | D | 60.9 | J | MSL,LDPR |
| | Lead | 3.82 | D | 3.82 | J | LDPR |
| | Mercury | 0.0173 | H, J | 0.0173 | J | HTA,MSLX,MSP |
| SIB-SC-E15-11-11.8-08/02/2022 | Zinc | 62.0 | D | 62.0 | J | MSL,LDPR |
| | Lead | 4.03 | D | 4.03 | J | LDPR |
| | Mercury | 0.0269 | H, J | 0.0269 | J | HTA,MSLX,MSP |
| SIB-SC-E13-9-10-08/03/2022 | Zinc | 64.6 | D | 64.6 | J | MSL,LDPR |
| | Lead | 4.52 | D | 4.52 | J | LDPR |
| | Mercury | 0.0423 | H | 0.0423 | J | HTA,MSLX,MSP |
| SIB-SC-E13-10-11-08/03/2022 | Zinc | 60.6 | D | 60.6 | J | MSL,LDPR |
| | Lead | 4.22 | D | 4.22 | J | LDPR |
| | Mercury | 0.0346 | H | 0.0346 | J | HTA,MSLX,MSP |
| SIB-SC-E13-11-12-08/03/2022 | Zinc | 63.5 | D | 63.5 | J | MSL,LDPR |
| | Lead | 4.32 | D | 4.32 | J | LDPR |
| | Mercury | 0.0458 | H | 0.0458 | J | HTA,MSLX,MSP |
| SIB-SC-E14-10-11-08/03/2022 | Zinc | 64.6 | D | 64.6 | J | MSL,LDPR |
| | Lead | 4.35 | D | 4.35 | J | LDPR |
| | Mercury | 0.0235 | H, J | 0.0235 | J | HTA,MSLX,MSP |
| SIB-SC-E14-11-12-08/03/2022 | Zinc | 60.4 | D | 60.4 | J | MSL,LDPR |
| | Lead | 3.76 | D | 3.76 | J | LDPR |
| | Mercury | 0.02 | H, J | 0.02 | J | HTA,MSLX,MSP |
| SIB-SC-E14-12-12.4-08/03/2022 | Zinc | 47.4 | D | 47.4 | J | MSL,LDPR |
| | Lead | 2.45 | D | 2.45 | J | LDPR |
| | Mercury | 0.00994 | H, J | 0.00994 | J | HTA,MSLX,MSP |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|---------|-----------|---------------|-----------------|---------------------|--------------|
| SIB-SC-D10-7-8-08/03/2022 | Zinc | 65.9 | D | 65.9 | J | MSL,LDPR |
| | Lead | 5.43 | D | 5.43 | J | LDPR |
| | Mercury | 0.0736 | H | 0.0736 | J | HTA,MSLX,MSP |
| SIB-SC-D10-8-8.5-08/03/2022 | Zinc | 49.3 | D | 49.3 | J | MSL,LDPR |
| | Lead | 2.89 | D | 2.89 | J | LDPR |
| | Mercury | 0.00688 | H, J | 0.00688 | J | HTA,MSLX,MSP |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|---|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0170 |
| Laboratory: ARI | Date: 7/28/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuiano (8.12.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-C13-9-10-08/03/2022 | 23F0170-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C13-10-11-08/03/2022 | 23F0170-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C13-11-12-08/03/2022 | 23F0170-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C14-6-7-08/04/2022 | 23F0170-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C14-7-8-08/04/2022 | 23F0170-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C14-9-10-08/04/2022 | 23F0170-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C14-10-11-08/04/2022 | 23F0170-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E11-8-9-08/04/2022 | 23F0170-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E11-9-10-08/04/2022 | 23F0170-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E11-13-14-08/04/2022 | 23F0170-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E11-14-14.7-08/04/2022 | 23F0170-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E10-9-10-08/05/2022 | 23F0170-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E10-10-11-08/05/2022 | 23F0170-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E10-11-12-08/05/2022 | 23F0170-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F11-6-7-08/06/2022 | 23F0170-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F11-7-8-08/06/2022 | 23F0170-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F11-11-12-08/06/2022 | 23F0170-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F11-12-13-08/06/2022 | 23F0170-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F12-7-8-08/06/2022 | 23F0170-19 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F12-8-9-08/06/2022 | 23F0170-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F12-9-10-08/06/2022 | 23F0170-21 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No completeness issues were noted. The narrative noted sporadic continuing calibration or IS failures on one of the two analytical columns and that data are reported using a column with acceptable performance. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury samples were frozen until prepped in accordance with the QAPP archiving protocols. The samples for PCB Aroclors were also stored frozen. Freezing extends the mercury holding time to 180 days; however, all samples were analyzed from 317 to 324 days after collection. All mercury results reported in this SDG are detections and should be qualified J, reason code HTA.

Qualification: Mercury results in all samples are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB06-08042022 (results reported in SDG 22H0215) is associated with all sample results reported in this SDG. The rinse blank was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is required. Equipment blank EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc; due to liquid-to-solid workup factors, these are equivalent to 0.207 mg/kg and 6.17 mg/kg in soil samples. All copper results are greater than the qualification limit of 1.14 mg/kg and all zinc results are greater than the qualification limit of 30.85 mg/kg and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %R was slightly below the control limits for Aroclor 1260 in the zb5 column in the SRM prepared with batch BLF0367; as the associated MS/MSD and LCS/LCSD met control limits, no qualification was applied.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on samples SIB-SC-C13-10-11-08/03/2022 and SIB-SC-E10-11-12-08/05/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits. No qualification is required.

An MS/MSD was performed on sample SIB-SC-C13-10-11-08/03/2022 (metals) and had a low %R in the MS and a high RPD for Mercury for batch BLF0466. All mercury results reported from samples prepared in that batch are detections and should be qualified J.

Qualification: The mercury results reported for the following samples are qualified J, reason code MSL,MSP: SIB-SC-C13-10-11-08/03/2022, SIB-SC-C13-11-12-08/03/2022, SIB-SC-C14-6-7-08/04/2022, SIB-SC-C14-7-8-08/04/2022, SIB-SC-C14-9-10-08/04/2022, SIB-SC-C14-10-11-08/04/2022, SIB-SC-E11-8-9-08/04/2022, SIB-SC-E11-9-10-08/04/2022, SIB-SC-E11-13-14-08/04/2022, SIB-SC-E11-14-14-7-08/04/2022, SIB-SC-E10-9-10-08/05/2022, SIB-SC-E10-10-11-08/05/2022, SIB-SC-E10-11-12-08/05/2022, SIB-SC-F11-6-7-08/06/2022, SIB-SC-F11-7-8-08/06/2022, SIB-SC-F11-11-12-08/06/2022, SIB-SC-F11-12-13-08/06/2022, SIB-SC-F12-7-8-08/06/2022, SIB-SC-F12-8-9-08/06/2022 and SIB-SC-F12-9-10-08/06/2022.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on sample SIB-SC-C13-10-11-08/03/2022 (metals). The duplicate pairs met all acceptance criteria for RPD or absolute difference.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-C13-9-10-08/03/2022 | Mercury | 0.0497 | -- | 0.0497 | J | HTA |
| SIB-SC-C13-10-11-08/03/2022 | Mercury | 0.0368 | H | 0.0368 | J | HTA,MSL,MSP |
| SIB-SC-C13-11-12-08/03/2022 | Mercury | 0.036 | H | 0.036 | J | HTA,MSL,MSP |
| SIB-SC-C14-6-7-08/04/2022 | Mercury | 0.27 | H | 0.27 | J | HTA,MSL,MSP |
| SIB-SC-C14-7-8-08/04/2022 | Mercury | 0.311 | H | 0.311 | J | HTA,MSL,MSP |
| SIB-SC-C14-9-10-08/04/2022 | Mercury | 0.214 | H | 0.214 | J | HTA,MSL,MSP |
| SIB-SC-C14-10-11-08/04/2022 | Mercury | 0.178 | H | 0.178 | J | HTA,MSL,MSP |
| SIB-SC-E11-8-9-08/04/2022 | Mercury | 0.11 | H | 0.11 | J | HTA,MSL,MSP |
| SIB-SC-E11-9-10-08/04/2022 | Mercury | 0.0776 | H | 0.0776 | J | HTA,MSL,MSP |
| SIB-SC-E11-13-14-08/04/2022 | Mercury | 0.0651 | H | 0.0651 | J | HTA,MSL,MSP |
| SIB-SC-E11-14-14.7-08/04/2022 | Mercury | 0.0625 | H | 0.0625 | J | HTA,MSL,MSP |
| SIB-SC-E10-9-10-08/05/2022 | Mercury | 0.0469 | H | 0.0469 | J | HTA,MSL,MSP |
| SIB-SC-E10-10-11-08/05/2022 | Mercury | 0.0477 | H | 0.0477 | J | HTA,MSL,MSP |
| SIB-SC-E10-11-12-08/05/2022 | Mercury | 0.0151 | H, J | 0.0151 | J | HTA,MSL,MSP |
| SIB-SC-F11-6-7-08/06/2022 | Mercury | 0.0379 | H | 0.0379 | J | HTA,MSL,MSP |
| SIB-SC-F11-7-8-08/06/2022 | Mercury | 0.0507 | H | 0.0507 | J | HTA,MSL,MSP |
| SIB-SC-F11-11-12-08/06/2022 | Mercury | 0.0325 | H | 0.0325 | J | HTA,MSL,MSP |
| SIB-SC-F11-12-13-08/06/2022 | Mercury | 0.0224 | H, J | 0.0224 | J | HTA,MSL,MSP |
| SIB-SC-F12-7-8-08/06/2022 | Mercury | 0.0912 | H | 0.0912 | J | HTA,MSL,MSP |
| SIB-SC-F12-8-9-08/06/2022 | Mercury | 0.0383 | H | 0.0383 | J | HTA,MSL,MSP |
| SIB-SC-F12-9-10-08/06/2022 | Mercury | 0.0392 | H | 0.0392 | J | HTA,MSL,MSP |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0172 |
| Laboratory: ARI | Date: 8/22/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (9/25/23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-F17-6-7-08/06/2022 | 23F0172-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F17-7-8-08/06/2022 | 23F0172-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E07-6-7-08/06/2022 | 23F0172-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E07-7-7.5-08/06/2022 | 23F0172-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-7-8-08/10/2022 | 23F0172-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-8-9-08/10/2022 | 23F0172-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L06-6-7-08/21/2022 | 23F0172-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-10-11-08/23/2022 | 23F0172-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C26-11-12-08/23/2022 | 23F0172-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-6-7-08/23/2022 | 23F0172-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-10-11-08/23/2022 | 23F0172-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B26-11-12-08/23/2022 | 23F0172-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-7-8-08/24/2022 | 23F0172-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C20-8-8.5-08/24/2022 | 23F0172-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E37-8-9-08/25/2022 | 23F0172-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E37-9-9.5-08/25/2022 | 23F0172-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D37-6-7-08/25/2022 | 23F0172-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D37-7-8-08/25/2022 | 23F0172-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D37-8-8.3-08/25/2022 | 23F0172-19 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-G01-6-6.6-09/02/2022 | 23F0172-20 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B04-7-8-09/04/2022 | 23F0172-21 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B04-8-9-09/04/2022 | 23F0172-22 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B04-9-9.8-09/04/2022 | 23F0172-23 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1254 which fails low in CCV5 on zb5 column. All associated data is reported from zb35 column as primary for SLG0002. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. All mercury analyses were performed approximately 140 to 170 days beyond the 180-day holding time for frozen samples; all affected mercury results are detections and should be qualified J-HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB06-08042022 (results reported in SDG 22H0215), EB07-08092022 (results reported in SDG 22H0279), EB08-08212022 (results reported in SDG 22H0491), EB09-08242022 (results reported in SDG 22H0491), and EB10-09052022 (results reported in SDG 22I0166) are associated with all sample results reported in this SDG. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results for the associated samples were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required. EB10-09052022 was contaminated with 0.062 µg/L lead. All sediment sample results for the associated samples were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required. Some of the rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits or were a single discrepancy of the four surrogate recoveries reported for each sample in the raw data and were within the expanded windows established by the HGL consistency memorandum.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on samples SIB-SC-L06-6-7-08/21/2022 and SIB-SC-G01-6-6.6-09/02/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on samples SIB-SC-F17-6-7-08/06/2022 and SIB-SC-D37-6-7-08/25/2022 (metals) and had all %R and RPDs within QAPP control limits except for the MSD for sample SIB-SC-F17-6-7-08/06/2022 (Method 7471B) which had the RPD exceed QC limits. All Mercury detections for batch BLF0710 should be qualified J non-detections should not be qualified.

Qualification: Analyte Mercury for samples SIB-SC-F17-6-7-08/06/2022, SIB-SC-F17-7-8-08/06/2022, and SIB-SC-E07-6-7-08/06/2022 are qualified J, reason code MSP.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on samples SIB-SC-F17-6-7-08/06/2022 and SIB-SC-D37-6-7-08/25/2022 (metals). The RPDs of the duplicate pairs met the acceptance criteria except for Mercury in batch BLG0317 and Lead in batch BLG0318.

Qualification: For analyte Mercury samples SIB-SC-B04-7-8-09/04/2022, SIB-SC-B04-8-9-09/04/2022, SIB-SC-B04-9-9.8-09/04/2022, SIB-SC-B26-10-11-08/23/2022, SIB-SC-B26-11-12-08/23/2022, SIB-SC-B26-6-7-08/23/2022, SIB-SC-C20-7-8-08/24/2022, SIB-SC-C20-8-8.5-08/24/2022, SIB-SC-C22-7-8-08/10/2022, SIB-SC-C22-8-9-08/10/2022, SIB-SC-C26-10-11-08/23/2022, SIB-SC-C26-11-12-08/23/2022, SIB-SC-D37-6-7-08/25/2022, SIB-SC-D37-7-8-08/25/2022, SIB-SC-D37-8-8.3-08/25/2022, SIB-SC-E07-7-7.5-08/06/2022, SIB-SC-E37-8-9-08/25/2022, SIB-SC-E37-9-9.5-08/25/2022, SIB-SC-G01-6-6.6-09/02/2022 and SIB-SC-L06-6-7-08/21/2022 are qualified J with reason code LDPA. For analyte Lead samples SIB-SC-B04-7-8-09/04/2022, SIB-SC-B04-8-9-09/04/2022, SIB-SC-B04-9-9.8-09/04/2022, SIB-SC-B26-10-11-08/23/2022, SIB-SC-B26-11-12-08/23/2022, SIB-SC-B26-6-7-08/23/2022, SIB-SC-C20-7-8-08/24/2022, SIB-SC-C20-8-8.5-08/24/2022, SIB-SC-C22-7-8-08/10/2022, SIB-SC-C22-8-9-08/10/2022, SIB-SC-C26-10-11-08/23/2022, SIB-SC-C26-11-12-08/23/2022, SIB-SC-D37-6-7-08/25/2022, SIB-SC-D37-7-8-08/25/2022, SIB-SC-D37-8-8.3-08/25/2022, SIB-SC-E07-7-7.5-08/06/2022, SIB-SC-E37-8-9-08/25/2022, SIB-SC-E37-9-9.5-08/25/2022, SIB-SC-G01-6-6.6-09/02/2022 and SIB-SC-L06-6-7-08/21/2022 are qualified J with reason code LDPR.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-F17-6-7-08/06/2022 | Mercury | 0.0247 | H, J | 0.0247 | J | HTA, MSH |
| SIB-SC-F17-7-8-08/06/2022 | Mercury | 0.0655 | H | 0.0655 | J | HTA, MSH |
| SIB-SC-E07-6-7-08/06/2022 | Mercury | 0.0168 | H, J | 0.0168 | J | HTA, MSH |
| SIB-SC-E07-7-7.5-08/06/2022 | Mercury | 0.0151 | H, J | 0.0151 | J | HTA, LDPA |
| | Lead | 3.79 | D | 3.79 | J | LDPR |
| SIB-SC-C22-7-8-08/10/2022 | Mercury | 0.147 | H | 0.147 | J | HTA, LDPA |
| | Lead | 4.99 | D | 4.99 | J | LDPR |
| SIB-SC-C22-8-9-08/10/2022 | Mercury | 0.025 | H, J | 0.025 | J | HTA, LDPA |
| | Lead | 5.36 | D | 5.36 | J | LDPR |
| SIB-SC-L06-6-7-08/21/2022 | Mercury | 0.0215 | H, J | 0.0215 | J | HTA, LDPA |
| | Lead | 4.29 | D | 4.29 | J | LDPR |
| SIB-SC-C26-10-11-08/23/2022 | Mercury | 0.191 | H | 0.191 | J | HTA, LDPA |
| | Lead | 47.1 | D | 47.1 | J | LDPR |
| SIB-SC-C26-11-12-08/23/2022 | Mercury | 0.32 | H | 0.32 | J | HTA, LDPA |
| | Lead | 23.2 | D | 23.2 | J | LDPR |
| SIB-SC-B26-6-7-08/23/2022 | Mercury | 0.0453 | H | 0.0453 | J | HTA, LDPA |
| | Lead | 4.66 | D | 4.66 | J | LDPR |
| SIB-SC-B26-10-11-08/23/2022 | Mercury | 0.0321 | H, J | 0.0321 | J | HTA, LDPA |
| | Lead | 4.42 | D | 4.42 | J | LDPR |
| SIB-SC-B26-11-12-08/23/2022 | Mercury | 0.0252 | H, J | 0.0252 | J | HTA, LDPA |
| | Lead | 4.44 | D | 4.44 | J | LDPR |
| SIB-SC-C20-7-8-08/24/2022 | Mercury | 0.389 | H | 0.389 | J | HTA, LDPA |
| | Lead | 60.4 | D | 60.4 | J | LDPR |
| SIB-SC-C20-8-8.5-08/24/2022 | Mercury | 0.0986 | H | 0.0986 | J | HTA, LDPA |
| | Lead | 24.6 | D | 24.6 | J | LDPR |
| SIB-SC-E37-8-9-08/25/2022 | Mercury | 0.307 | H | 0.307 | J | HTA, LDPA |
| | Lead | 40.5 | D | 40.5 | J | LDPR |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-E37-9-9.5-08/25/2022 | Mercury | 0.905 | H | 0.905 | J | HTA, LDPA |
| | Lead | 54.7 | D | 54.7 | J | LDPR |
| SIB-SC-D37-6-7-08/25/2022 | Mercury | 0.0147 | H, J | 0.0147 | J | HTA, LDPA |
| | Lead | 3.14 | D | 3.14 | J | LDPR |
| SIB-SC-D37-7-8-08/25/2022 | Mercury | 0.0279 | H | 0.0279 | J | HTA, LDPA |
| | Lead | 4.44 | D | 4.44 | J | LDPR |
| SIB-SC-D37-8-8.3-08/25/2022 | Mercury | 0.0156 | H, J | 0.0156 | J | HTA, LDPA |
| | Lead | 5 | D | 5 | J | LDPR |
| SIB-SC-G01-6-6.6-09/02/2022 | Mercury | 0.0212 | H, J | 0.0212 | J | HTA, LDPA |
| | Lead | 3.83 | D | 3.83 | J | LDPR |
| SIB-SC-B04-7-8-09/04/2022 | Mercury | 0.0702 | H | 0.0702 | J | HTA, LDPA |
| | Lead | 7.86 | D | 7.86 | J | LDPR |
| SIB-SC-B04-8-9-09/04/2022 | Mercury | 0.031 | H | 0.031 | J | HTA, LDPA |
| | Lead | 4.83 | D | 4.83 | J | LDPR |
| SIB-SC-B04-9-9.8-09/04/2022 | Mercury | 0.026 | H, J | 0.026 | J | HTA, LDPA |
| | Lead | 4.81 | D | 4.81 | J | LDPR |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0300 |
| Laboratory: ARI | Date: 8/18/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (9.26.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-E04-0-1-08/08/2022 | 23F0300-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-104-6-7-08/09/2022 | 23F0300-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-104-7-8-08/09/2022 | 23F0300-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-104-8-8.7-08/09/2022 | 23F0300-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C22-0-1-08/10/2022 | 23F0300-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F20-0-1-07/21/2022 | 23F0300-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D06-0-1-07/21/2022 | 23F0300-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C06-0-1-07/22/2022 | 23F0300-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B25-0-1-07/25/2022 | 23F0300-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B32-0-1-07/25/2022 | 23F0300-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H08-0-1-07/26/2022 | 23F0300-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-H06-0-1-07/26/2022 | 23F0300-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I06-0-1-07/26/2022 | 23F0300-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C05-0-1-07/24/2022 | 23F0300-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E08-0-1-08/05/2022 | 23F0300-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-I08-0-1-07/28/2022 | 23F0300-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D35-0-1-08/04/2022 | 23F0300-17 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1260 which fails high in ICV2, CCV2,4 on zb35 column. All associated data is reported from zb5 column as primary. All this has been noted but falls outside of a 2A validation. The internal standard areas were within limits except for HBBP internal standard which fails low in sample 23F300-8 (SIB-SC-C06-0-1-07/22/2022) on both columns for the initial analysis. The sample was re-analyzed at a 25x dilution with internal standards in control. Both sets of analyses were reported in the laboratory report and in the EDD. In the judgment of the HGL reviewer, the usable PCB Aroclors results for this sample are the non-detected results reported from the original 5x analysis and the detected results from the 25x dilution reanalysis. The detected results from the 5x analysis and the non-detected results from the 25x reanalysis should be qualified DNR-EXC.

The laboratory reported results for chromium; however, chromium is not a target metal for the sediment matrix. All chromium results should be qualified DNR-EXC and have the “reportable_result” field in the database set to “No”.

Qualification: The detected PCB Aroclors results for the original (5x dilution) analysis of sample SIB-SC-C06-0-1-07/22/2022 and the non-detected PCB Aroclors from the reanalysis (25x dilution) are qualified DNR-EXC.

All chromium results are qualified DNR-EXC.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. All mercury analyses were performed approximately 140 to 160 days beyond the 180-day holding time for frozen samples; all affected mercury results are detections and should be qualified J-HTA.

Qualification: All mercury results are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB04-07212022 (results reported in SDG 22G0343), EB05-07262022 (results reported in SDG 22G0436), EB06-08042022 (results reported in SDG 22H0215), and EB07-08092022 (results reported in SDG 22H0279) are associated with all sample results reported in this SDG. EB06-08042022 was contaminated with 0.207 µg/L copper and 6.17 µg/L zinc. All sediment sample results in the associated samples were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required. Some of the rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – Samples SIB-SC-C06-0-1-07/22/2022 (both original analysis and reanalysis) and SIB-SC-I08-0-1-07/28/2022 had a high %R for surrogates Decachlorobiphenyl and Decachlorobiphenyl [2C]. For sample SIB-SC-C06-0-1-07/22/2022, no detected results are reported from the 5x diluted original analysis; the detected results for sample SIB-SC-C06-0-1-07/22/2022 are reported from the 25x diluted reanalysis. Surrogate %Rs are not applicable for samples analyzed at >5x dilution and no results for sample SIB-SC-C06-0-1-07/22/2022 require qualification. The detected Aroclor results for sample SIB-SC-I08-0-1-07/28/2022 should be qualified J with reason code SSH and non-detections should not be qualified.

Qualification: The detected Aroclor results for sample SIB-SC-I08-0-1-07/28/2022 are qualified J with reason code SSH.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-D06-0-1-07/21/2022 (Method 8082A) and the %R was below the QC limits in both the MS and MSD. The RPDs for both the MS/MSD were within QAPP control limits. Aroclor results for sample SIB-SC-D06-0-1-07/21/2022 should be qualified J (detections) or UJ (non-detections), reason code MSL.

Qualification: For sample SIB-SC-D06-0-1-07/21/2022 analytes Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1262 and Aroclor 1268 are qualified UJ. Analytes Aroclor 1248, Aroclor 1254 and Aroclor 1260 are qualified J. Reason code MSL is applied to all qualified results.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was not performed on this SDG.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|--|--------------|-----------|---------------|-----------------|---------------------|-------------|
| All samples | Chromium | varies | varies | varies | DNR | EXC |
| | Mercury | varies | varies | varies | J | HTA |
| SIB-SC-D06-0-1-07/21/2022 | Aroclor 1016 | 7.8 | D, U | 7.8 | UJ | MSL |
| | Aroclor 1221 | 7.8 | D, U | 7.8 | UJ | MSL |
| | Aroclor 1232 | 7.8 | D, U | 7.8 | UJ | MSL |
| | Aroclor 1242 | 7.8 | D, U | 7.8 | UJ | MSL |
| | Aroclor 1248 | 20.2 | D | 20.2 | J | MSL |
| | Aroclor 1254 | 43.7 | D | 43.7 | J | MSL |
| | Aroclor 1260 | 47.8 | D | 47.8 | J | MSL |
| | Aroclor 1262 | 2.9 | D, U | 2.9 | UJ | MSL |
| | Aroclor 1268 | 2.9 | D, U | 2.9 | UJ | MSL |
| SIB-SC-C06-0-1-07/22/2022 (original 5x dilution analysis) | Aroclor 1260 | 25.5 | D | 25.5 | DNR | EXC |
| SIB-SC-C06-0-1-07/22/2022 (25x dilution reanalysis) | varies | varies | varies | varies | DNR | EXC |
| SIB-SC-I08-0-1-07/28/2022 | Aroclor 1248 | 712 | D | 712 | J | SSH |
| | Aroclor 1254 | 1250 | D | 1250 | J | SSH |
| | Aroclor 1260 | 798 | D | 798 | J | SSH |

**Stage 2A Review
Data Quality Control (QC)**

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|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0303 |
| Laboratory: ARI | Date: 8/22/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (9.26.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-------------------------------|----------------------|-------------------------------|--------|
| SIB-SC-D05-0-1-08/09/2022 | 23F0303-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E06-0-1-08/08/2022 | 23F0303-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E36-0-1-07/08/2022 | 23F0303-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J06-10-11-07/26/2022 | 23F0303-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J06-11-11.5-07/26/2022 | 23F0303-05 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K04-0-1-07/27/2022 | 23F0303-06 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K03-7-8-07/27/2022 | 23F0303-07 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K03-8-9-07/27/2022 | 23F0303-08 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L03-8-9-07/27/2022 | 23F0303-09 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L03-9-9.6-07/27/2022 | 23F0303-10 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C23-0-1-07/06/2022 | 23F0303-11 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D33-13-14-07/07/2022 | 23F0303-12 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D33-14-14.4-07/07/2022 | 23F0303-13 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-C07-0-1-07/22/2022 | 23F0303-14 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-D37-0-1-08/25/2022 | 23F0303-15 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-N00-0-1-08/25/2022 | 23F0303-16 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-J08-0-1-09/01/2022 | 23F0303-17 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-B33-0-1-08/21/2022 | 23F0303-18 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-K01-0-1-08/20/2022 | 23F0303-19 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1260 which fails high in CCVA on zb5 column. All associated data is reported from zb35 column as primary for SLG 0116. Aroclor 1260 fails high in CCV6 on zb35 column. All associated data is reported from zb5 column as primary for SLG0139. Aroclor 1260 also fails high in ICV2, CCV2,4 on zb35 column. All associated data is reported from zb5 column as primary for SLF0159. The internal standard areas were within limits except for internal standard HBBP which fails low in sample 22F0303-14 on zb5 column. All associated data is reported from zb35 column as primary. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. All mercury analyses were performed approximately 130 to 165 days beyond the 180-day holding time for frozen samples; all affected mercury results should be qualified J-HTA (detections) or UJ-HTA (non-detections).

Qualification: All detected mercury results are qualified J, reason code HTA; all non-detected mercury results are qualified UJ, reason code HTA.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB01-07122022 (results reported in SDG 22G0258), EB04-07212022 (results reported in SDG 22G0343), EB05-07262022 (results reported in SDG 22G0436), EB07-08092022 (results reported in SDG 22H0279), EB08-08212022 (results reported in SDG 22H0491), EB09-08242022 (results reported in SDG 22H0491) and EB10-09052022 (results reported in SDG 22I0166) are associated with all sample results reported in this SDG. Mercury was detected at a low concentration in EB01-07122022; however, the mercury concentration detected in the blank is comparable to the concentration found in the associated method blank and is attributable to aqueous sample preparation. No qualification is required. EB10-09052022 was contaminated with 0.062 µg/L lead. All sediment sample results for the associated samples were > the corresponding soil-equivalent concentrations in the equipment blank and no qualification is required. Some of the rinse blanks were contaminated with low levels of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits except for surrogates Decachlorobiphenyl, Tetrachlorometaxylene, Decachlorobiphenyl [2C] and Tetrachlorometaxylene [2C] for sample SIB-SC-J08-0-1-09/01/2022 which did not meet QC limits. The detected Aroclor results for these samples should be qualified J and non-detections should be qualified UJ with reason code SSL.

Qualification: For sample SIB-SC-J08-0-1-09/01/2022, all detected Aroclors are qualified J and all non-detected Aroclors are qualified UJ; reason code SSL.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on samples SIB-SC-K03-7-8-07/27/2022 and SIB-SC-G01-6-6-09/02/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on sample SIB-SC-D05-0-1-08/09/2022 (metals) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on sample SIB-SC-D05-0-1-08/09/2022 (metals). All the RPDs of the duplicate pairs met the acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---------------------------|--------------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-K03-7-8-07/27/2022 | Mercury | 0.00549 | H U | 0.00549 | UJ | HTA |
| All other samples | Mercury | varies | varies | varies | J | HTA |
| SIB-SC-J08-0-1-09/01/2022 | Aroclor 1016 | 1.6 | U | 1.6 | UJ | SSL |
| | Aroclor 1221 | 1.6 | U | 1.6 | UJ | SSL |
| | Aroclor 1232 | 1.6 | U | 1.6 | UJ | SSL |
| | Aroclor 1242 | 1.6 | U | 1.6 | UJ | SSL |
| | Aroclor 1248 | 11.7 | - | 11.7 | J | SSL |
| | Aroclor 1254 | 24.1 | - | 24.1 | J | SSL |
| | Aroclor 1260 | 22.4 | - | 22.4 | J | SSL |
| | Aroclor 1262 | 0.6 | U | 0.6 | UJ | SSL |
| | Aroclor 1268 | 0.6 | U | 0.6 | UJ | SSL |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23F0403 |
| Laboratory: ARI | Date: 8/18/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (8.23.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-G07-0-1-07/14/2022 | 23F0403-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L04-0-1-07/27/2022 | 23F0403-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L04-9-10-07/27/2022 | 23F0403-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-L04-10-11-07/27/2022 | 23F0403-04 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The initial and continuing calibrations were within method requirements except for Aroclor 1260 which fails low in ICV2 on zb5 column. All associated data is reported from zb35 column as primary for SLG0184. The internal standard areas were within limits except for HBBP fails low in sample 23F0403-2 on zb5 column. All associated data is reported from zb35 column as primary. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – All samples were prepared and analyzed within their required holding times. The narrative noted that mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. The holding time for frozen mercury samples is 180 days; sample SIB-SC-G07-0-1-07/14/2022 was analyzed on day 371, which is more than double the holding time and constitutes an extreme discrepancy and the detected mercury result for this sample should be qualified J-HTAX. All other samples were analyzed for mercury on day 358. All affected mercury results in these samples are detections and should be qualified J-HTA.

Qualification: The mercury result for sample SC-G07-0-1-07/14/2022 is qualified J, reason code HTAX. The mercury results for samples SIB-SC-L04-0-1-07/27/2022, SIB-SC-L04-9-10-07/27/2022, and SIB-SC-L04-10-11-07/27/2022 are qualified J, reason code HTA.

Method Blanks – All method blanks were free from contamination, except for the blank associated with method 6020B UCT-KED which contained Zinc (1.4 mg/kg) contamination for batch BLG0332. All lab results were greater than the qualification level, no further qualification is required.

Qualification: None required.

Rinsate Blanks – Equipment rinse blank EB02-07132022 (results reported in SDG 22G0258) is associated with sample SIB-SC-G07-0-1-07/14/2022 and EB05-07262022 (results reported in SDG 22G0436) is associated with all other sample results reported in this SDG. EB02-07/13/2022 was contaminated with

0.000031 mg/L (0.031 µg/L) of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with this EB and in the judgment of the HGL reviewer, the detected mercury result in the EB represents laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required. Rinse blank EB05-07262022 was contaminated with a low level of chromium; chromium is not a target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – An MS/MSD was performed on sample SIB-SC-L04-10-11-07/27/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was not performed on samples in this SDG.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and RL were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-----------------------------|---------|-----------|---------------|-----------------|---------------------|-------------|
| SIB-SC-G07-0-1-07/14/2022 | Mercury | 0.248 | -- | 0.248 | J | HTAX |
| SIB-SC-L04-0-1-07/27/2022 | Mercury | 0.21 | -- | 0.21 | J | HTA |
| SIB-SC-L04-9-10-07/27/2022 | Mercury | 0.0498 | -- | 0.0498 | J | HTA |
| SIB-SC-L04-10-11-07/27/2022 | Mercury | 0.0432 | -- | 0.0432 | J | HTA |

**Stage 2A Review
Data Quality Control (QC)**

| | |
|--|---------------------|
| Site: PHSS-SIB PDI | SDG #: Case 23H0418 |
| Laboratory: ARI | Date: 9/20/2023 |
| HydroGeoLogic, Inc. Reviewer: Deanna Valdebenito Peer Reviewer: Ken Rapuano (9.26.23) | Project: DT2002 |

| Client Sample ID | Laboratory Sample ID | Analyses | Matrix |
|-----------------------------|----------------------|-------------------------------|--------|
| SIB-SC-E23-11-12-07/12/2022 | 23H0418-01 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-E23-12-13-07/12/2022 | 23H0418-02 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F23-7-8-07/13/2022 | 23H0418-03 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F23-8-9-07/13/2022 | 23H0418-04 | PCB Aroclors and Total Metals | Solid |
| SIB-SC-F23-9-10-07/13/2022 | 23H0418-05 | PCB Aroclors and Total Metals | Solid |

The following Stage 2A review was performed on the requested analyses. No results were rejected, and analytical completeness is 100%.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. The internal standard areas were within limits except for internal standard HBBP which fails low in 23H0418-01, 23H0418-02 and 23H0418-03 on zb5 column. All associated data is reported from zb35 column as primary. All this has been noted but falls outside of a 2A validation.

Qualification: None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory in acceptable condition and temperature and were properly preserved.

Qualification: None required.

Holding Times – The narrative noted that Mercury and PCB Aroclors samples were frozen to extend holding times; this is in accordance with the QAPP archiving protocols. All Aroclor samples were extracted approximately 40 days beyond the 1-year holding time for frozen Aroclors sample preparation and all mercury analyses were performed approximately 230 days beyond the 180-day holding time for frozen mercury samples. All Aroclor results should be qualified J (detections) or UJ (non-detections), reason code HTP; all mercury results are detections and should be qualified J, reason code HTAX.

Qualification: All Aroclor results are qualified J (detections) or UJ (non-detections), reason code HTP. All mercury results are qualified J, reason code HTAX.

Method Blanks – All method blanks were free from contamination.

Qualification: None required.

Rinsate Blanks – Equipment rinse blanks EB01-07122022 and EB02-07132022 (results reported in SDG 22G0258) are associated with all sample results reported in this SDG. Both EBs were contaminated with low levels of mercury. Mercury was detected at 0.000032 mg/L (0.032 µg/L) in the method blank associated with both EBs, and this concentration was greater than that reported in the EBs. In the judgment of the HGL reviewer, the detected mercury results in the EBs represent laboratory contamination associated with aqueous sample preparation and is not applicable to sediment samples. No additional qualification is required. Rinse blank EB02-07132022 was contaminated with a low level of chromium; chromium is not a

target analyte for sediment samples and no qualification is required.

Qualification: None required.

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) – All LCS/LCSD %Rs and RPDs were within QAPP control limits. A standard reference material was also reported for each PCB, metals, and mercury preparation batch; the SRM %Rs met the control limits.

Qualification: None required.

Surrogates – All surrogates were within QAPP control limits.

Qualification: None required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) –

An MS/MSD was performed on sample SIB-SC-F23-8-9-07/13/2022 (Method 8082A) and had all %R and RPDs within QAPP control limits.

Qualification: None required.

An MS/MSD was performed on sample SIB-SC-E23-11-12-07/12/2022 (metals) and had all %R and RPDs within QAPP control limits except for the MSD for method 7471B. For sample SIB-SC-E23-11-12-07/12/2022 the MSD %R was below the control limits and the RPD did not meet the QC limit. All detected Mercury results for batch BLH0703 should be qualified J non-detections should be qualified UJ.

Qualification: All Mercury results are qualified J with reason code MSL, MSP.

Field Duplicate – A field duplicate was not submitted with the samples in this SDG.

Qualification: None required.

Laboratory Duplicate – A laboratory duplicate was performed on sample SIB-SC-E23-11-12-07/12/2022 (metals). All RPDs met acceptance criteria.

Qualification: None required.

Compound Quantitation – Analyte results were reported with the associated DL, LOD, and LOQ in the DoD format instead of with the associated MDL and RL. Non-detected results were reported on the hardcopy as <#, where # corresponds to the LOD. The HGL reviewer confirmed that the value associated with non-detected results in the EDD is the MDL, in accordance with the project reporting requirements. Analytes detected between the MDL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table (concentrations in µg/kg [Aroclors] or mg/kg [metals]):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|-------------|----------|--------------------------|---------------|-----------------|---------------------|----------------|
| All samples | Mercury | varies | varies | varies | J | HTAX, MSL, MSP |
| | Aroclors | All non-detected results | | | UJ | HTP |
| | | All detected results | | | J | HTP |