**High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry**
PCCDs/PCDFs (EPA Method 1613B), PCB Congeners (EPA Method 1668C), and Organochlorine Pesticides (EPA Method 1699)
**Stage 2A Review**
**Data Quality Control (QC)**

| | |
|---|---|
| Site: PHSS-Swan Island Basin | SDG #: B7225 |
| Laboratory: SGS Wilmington (NC) | Project #: DT2002.03.03.03.01 |
| HydroGeoLogic, Inc. Validator: Joseph Vilain | Validation Date: 06.01.23 |
| HGL QC Reviewer: Ken Rapuano | Peer Review Date: 06.01.23 |

| Client Sample ID | Laboratory Sample ID | Matrix |
|---|---|---|
| SIB-SE-AAM131-FRONT-102122 | B7225_001 | Pre-filter & sediment |
| SIB-SE-AAQ005-FRONT-102122 | B7225_002 | Pre-filter & sediment |
| SIB-SE-AAM169-FRONT-102122 | B7225_003 | Pre-filter & sediment |
| SIB-SE-AAM107-FRONT-102122 | B7225_004 | Pre-filter & sediment |
| SIB-SE-AAP957-FRONT-102122 | B7225_005 | Pre-filter & sediment |
| SIB-SW-AAM131-BACK-102122 | B7225_006 | PUF Cartridge |
| SIB-SW-AAQ005-BACK-102122 | B7225_007 | PUF Cartridge |
| SIB-SW-AAM169-BACK-102122 | B7225_008 | PUF Cartridge |
| SIB-SW-AAM107-BACK-102122 | B7225_009 | PUF Cartridge |
| SIB-SW-AAP957-BACK-102122 | B7225_010 | PUF Cartridge |

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.

*Qualification:* None required.

Method Blanks – The method 1613B method bank was contaminated with 1234678-HpCDD and OCDD. All sample results were more than 5x the blank concentration and no qualification is required. The method 1668C method bank was contaminated with over 100 PCBs; detections below the qualification threshold should be qualified U. The 1699M method bank was contaminated with several pesticides; detections below the qualification threshold should be qualified U.

All field samples were analyzed for PCB congeners at 2x dilution; however, in the judgment of the HGL reviewer, the contamination shown in the method blank is most likely due to the extraction process rather than the dilution of the extracts or the analytical process. In order to prevent over-qualification of PCB congeners, which are a known contaminant of concern at the site, the action levels calculated using the method blank concentrations were not subsequently increased due to dilution.

***Qualification:*** **Detections of contaminated compounds detected below the qualification threshold are qualified U.**

Trip Blanks – A trip blank was not submitted with the samples in this SDG.

*Qualification:* None required.

Rinsate Blanks – Rinsate blanks were not submitted with the samples in this SDG.

*Qualification:* None required.

Ambient Blanks – An ambient blank was not submitted with this SDG.

*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 (EISs) were within QAPP control limits with the exception of low EIS %Rs for all five aqueous (PUF) sample fractions. The dieldrin results reported for samples are qualified J-SSL or UJ-SSL.

***Qualification:*** **The dieldrin result for the five "FRONT" samples are qualified J-SSL (detections) or UJ-SSL (non-detections).**

Matrix Spike/Matrix Spike Duplicate (MS/MSD) – MS/MSD was not performed for this SDG.

*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 in this SDG.

*Qualification:* None required.

Compound Quantitation – Analyte non-detections were reported as ND with the associated DL, LOD, and LOQ included on the result summary pages. This reporting format is equivalent to reporting non-detected data in the DoD "LOD U" format. Analytes detected between the DL and LOQ were reported as J-qualified results by the laboratory. These J qualifiers were retained unless superseded by a more severe qualifier.

If a detected analyte has an ion ration outside the characteristic ion ratio window, the result is reported as an estimated maximum potential concentration. All results reported as an EMPC are qualified J-EMPC unless superseded by a higher priority qualifier.

*Qualification:* None required.

Qualification Summary Table (results in pg):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| All samples | PCBs as Congeners | See below | | | | |
| SIB-SE-AAM131-FRONT-102122 | Dieldrin | 3560 | B | 3560 | U | MBL,SSL |
| SIB-SE-AAQ005-FRONT-102122 | Dieldrin | 2530 | B | 2530 | U | MBL,SSL |
| SIB-SE-AAM169-FRONT-102122 | Dieldrin | 1400 | B EMPC | 1400 | UJ | MBL,EMPC, SSL |
| SIB-SE-AAM107-FRONT-102122 | Dieldrin | 1500 | B | 1500 | U | MBL,SSL |
| SIB-SE-AAP957-FRONT-102122 | Dieldrin | 6490 | B | 6490 | J | SSL |
| SIB-SW-AAM131-BACK-102122 | No qualification required | | | | | |
| SIB-SW-AAQ005-BACK-102122 | P,P’-DDE | 1040 | B | 1040 | U | MBL |
| SIB-SW-AAM169-BACK-102122 | P,P’-DDE | 896 | J B | 896 | U | MBL |
| | Dieldrin | 2770 | B | 2770 | U | MBL |
| SIB-SW-AAM107-BACK-102122 | P,P’-DDE | 583 | J B | 583 | U | MBL |
| | Dieldrin | 2890 | B | 2890 | U | MBL |
| SIB-SW-AAP957-BACK-102122 | O,P'-DDE | 240 | J B | 240 | U | MBL |

The method blank contamination for PCBs as congeners was widespread and at elevated concentrations. This resulted in 695 PCB congener results being qualified U with reason code MBL (blank concentration <PQL) or MBH (blank concentration >PQL).