**High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry**
PCB Congeners (EPA Method 1668C)
**Stage 2A Review**
**Data Quality Control (QC)**

| | |
|---|---|
| Site: PHSS-Swan Island Basin | SDG #: 21310 |
| Laboratory: CFA | Project #: DT2002.03.03.03.01 |
| HydroGeoLogic, Inc. Validator: John Tracy | Validation Date: 09.01.23 |
| HGL QC Reviewer: Ken Rapuano | Peer Review Date: 9.8.23 |

| Client Sample ID | Laboratory Sample ID | Matrix |
|---|---|---|
| SIB-SW-WR198-050522 | 21310001 | Stormwater |
| SIB-SW-WR428-050522 | 21310002 | Stormwater |

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 1668C method blank was contaminated with 36 PCB congeners; all results detected in the method blank were below the associated PQL. The qualification level associated with each PCB congener in the method blank is the reported concentration multiplied by a factor of 5; detected results below the qualification level should be qualified U in the associated samples, with reason code MBL.

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

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

*Qualification:* None required.

Equipment Blanks – No equipment blanks were associated with 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.

*Qualification:* None required.

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

*Qualification:* None required.

Field Duplicate – A field duplicate was not performed with 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:*** **The following results are qualified:**

- **All results reported with a laboratory qualifier of K are qualified J with reason code EMPC.**

Qualification Summary Table (results in pg/L):

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| SIB-SW-WR198-050522 | 2,2',3,3',4,4',5,5',6,6'-DECACHLOROBIPHENYL (209) | 1.38 | BJ | 1.38 | U | MBL |
| SIB-SW-WR198-050522 | 3,3'-DICHLOROBIPHENYL (11) | 58.7 | BJ | 58.7 | U | MBL |
| SIB-SW-WR198-050522 | PCB-171/173 | 1.93 | BCJK | 1.93 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | 2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL (174) | 5.33 | JK | 5.33 | J | EMPC |
| SIB-SW-WR198-050522 | 2,2',3,3',4',5,6-HEPTACHLOROBIPHENYL (177) | 3.27 | JK | 3.27 | J | EMPC |
| SIB-SW-WR198-050522 | PCB-180/193 | 12.6 | BCJ | 12.6 | U | MBL |
| SIB-SW-WR198-050522 | PCB-128/166 | 5.18 | BCJ | 5.18 | U | MBL |
| SIB-SW-WR198-050522 | PCB-135/151 | 9.64 | CJK | 9.64 | J | EMPC |
| SIB-SW-WR198-050522 | 2,2',3,4',5,5'-HEXACHLOROBIPHENYL (146) | 3.33 | JK | 3.33 | J | EMPC |
| SIB-SW-WR198-050522 | PCB-156/157 | 4.46 | BCJK | 4.46 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | 2,2',3,3',4,5,5',6,6'-NONACHLOROBIPHENYL (208) | 1.13 | BJ | 1.13 | U | MBL |
| SIB-SW-WR198-050522 | 2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL (194) | 3.53 | BJK | 3.53 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | 2,2',3,3',4,4',5,6'-OCTACHLOROBIPHENYL (196) | 1.91 | BJK | 1.91 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | PCB-198/199 | 5.1 | BCJ | 5.1 | U | MBL |
| SIB-SW-WR198-050522 | 2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL (203) | 2.93 | JK | 2.93 | J | EMPC |
| SIB-SW-WR198-050522 | 2,3,3',4,4'-PENTACHLOROBIPHENYL (105) | 8.43 | JK | 8.43 | J | EMPC |
| SIB-SW-WR198-050522 | 3,3',4,4',5-PENTACHLOROBIPHENYL (126) | 2.99 | JK | 2.99 | J | EMPC |
| SIB-SW-WR198-050522 | Total PCB Congeners | 453 | J | 453 | U | MBL |
| SIB-SW-WR198-050522 | PCB-61/70/74/76 | 10.2 | BCJ | 10.2 | U | MBL |
| SIB-SW-WR198-050522 | PCB-40/71 | 3.7 | CJK | 3.7 | J | EMPC |
| SIB-SW-WR198-050522 | PCB-44/47/65 | 10.7 | BCJ | 10.7 | U | MBL |
| SIB-SW-WR198-050522 | 2,2',3,6'-TETRACHLOROBIPHENYL (46) | 1.3 | JK | 1.3 | J | EMPC |
| SIB-SW-WR198-050522 | PCB-45/51 | 2.63 | BCJK | 2.63 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | PCB-49/69 | 3.93 | BCJ | 3.93 | U | MBL |
| SIB-SW-WR198-050522 | 2,2',5,5'-TETRACHLOROBIPHENYL (52) | 15.9 | BJ | 15.9 | U | MBL |
| SIB-SW-WR198-050522 | 2,3,3',4'-TETRACHLOROBIPHENYL (56) | 3.31 | JK | 3.31 | J | EMPC |
| SIB-SW-WR198-050522 | 2,3',4,4'-TETRACHLOROBIPHENYL (66) | 5.5 | BJ | 5.5 | U | MBL |
| SIB-SW-WR198-050522 | 3,3',4,4'-TETRACHLOROBIPHENYL (77) | 4.42 | BJ | 4.42 | U | MBL |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| SIB-SW-WR198-050522 | PCB-20/28 | 4.4 | BCJK | 4.4 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | PCB-21/33 | 3.08 | BCJK | 3.08 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | 2,4',5-TRICHLOROBIPHENYL (31) | 4.06 | BJK | 4.06 | UJ | MBL,EMPC |
| SIB-SW-WR198-050522 | 3,4,4'-TRICHLOROBIPHENYL (37) | 4.18 | JK | 4.18 | J | EMPC |
| SIB-SW-WR428-050522 | 4-CHLOROBIPHENYL (3) | 4.84 | BJK | 4.84 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',4,4',5,5',6,6'-DECACHLOROBIPHENYL (209) | 1.22 | BJK | 1.22 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | 3,3'-DICHLOROBIPHENYL (11) | 38.8 | BJ | 38.8 | U | MBL |
| SIB-SW-WR428-050522 | PCB-171/173 | 1.88 | BCJK | 1.88 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',5,5',6-HEPTACHLOROBIPHENYL (178) | 1.2 | JK | 1.2 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',5,6,6'-HEPTACHLOROBIPHENYL (179) | 1.86 | JK | 1.86 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-180/193 | 12.5 | BCJ | 12.5 | U | MBL |
| SIB-SW-WR428-050522 | 2,3,3',4,4',5,6-HEPTACHLOROBIPHENYL (190) | 1.54 | BJK | 1.54 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | PCB-128/166 | 6.59 | BCJ | 6.59 | U | MBL |
| SIB-SW-WR428-050522 | 2,2',3,4,5',6-HEXACHLOROBIPHENYL (144) | 1.52 | JK | 1.52 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-156/157 | 6.14 | BCJ | 6.14 | U | MBL |
| SIB-SW-WR428-050522 | 2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL (206) | 2.01 | JK | 2.01 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL (194) | 3.42 | BJ | 3.42 | U | MBL |
| SIB-SW-WR428-050522 | 2,2',3,3',4,4',5,6'-OCTACHLOROBIPHENYL (196) | 2.14 | BJ | 2.14 | U | MBL |
| SIB-SW-WR428-050522 | PCB-197/200 | 0.685 | BCJK | 0.685 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | PCB-198/199 | 3.42 | BCJ | 3.42 | U | MBL |
| SIB-SW-WR428-050522 | 2,2',3,3',5,5',6,6'-OCTACHLOROBIPHENYL (202) | 0.877 | JK | 0.877 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL (203) | 2.1 | JK | 2.1 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',4-PENTACHLOROBIPHENYL (82) | 4.39 | JK | 4.39 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,3',6-PENTACHLOROBIPHENYL (84) | 6.57 | JK | 6.57 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-86/87/97/109/119/125 | 15.6 | CJK | 15.6 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-90/101/113 | 20.6 | BCJ | 20.6 | U | MBL |
| SIB-SW-WR428-050522 | PCB-88/91 | 3.47 | CJK | 3.47 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',3,5',6-PENTACHLOROBIPHENYL (95) | 18.6 | BJK | 18.6 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | Total PCB Congeners | 473 | J | 473 | U | MBL |
| SIB-SW-WR428-050522 | PCB-61/70/74/76 | 9.54 | BCJ | 9.54 | U | MBL |

| Sample | Analyte | Lab Value | Lab Qualifier | Validated Value | Validated Qualifier | Reason Code |
|---|---|---|---|---|---|---|
| SIB-SW-WR428-050522 | PCB-40/71 | 3.81 | CJK | 3.81 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-44/47/65 | 8.47 | BCJ | 8.47 | U | MBL |
| SIB-SW-WR428-050522 | PCB-45/51 | 2.76 | BCJK | 2.76 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | PCB-49/69 | 3.42 | BCJ | 3.42 | U | MBL |
| SIB-SW-WR428-050522 | PCB-50/53 | 2.12 | CJK | 2.12 | J | EMPC |
| SIB-SW-WR428-050522 | 2,2',5,5'-TETRACHLOROBIPHENYL (52) | 14.4 | BJ | 14.4 | U | MBL |
| SIB-SW-WR428-050522 | 2,3,3',4'-TETRACHLOROBIPHENYL (56) | 2.72 | JK | 2.72 | J | EMPC |
| SIB-SW-WR428-050522 | 2,3',4,4'-TETRACHLOROBIPHENYL (66) | 4.26 | BJK | 4.26 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | 2,3,4',6-TETRACHLOROBIPHENYL (64) | 2.65 | JK | 2.65 | J | EMPC |
| SIB-SW-WR428-050522 | 3,3',4,4'-TETRACHLOROBIPHENYL (77) | 1.82 | BJ | 1.82 | U | MBL |
| SIB-SW-WR428-050522 | PCB-18/30 | 2.59 | CJK | 2.59 | J | EMPC |
| SIB-SW-WR428-050522 | PCB-20/28 | 7.89 | BCJ | 7.89 | U | MBL |
| SIB-SW-WR428-050522 | 2,3,4'-TRICHLOROBIPHENYL (22) | 2.87 | BJ | 2.87 | U | MBL |
| SIB-SW-WR428-050522 | PCB-21/33 | 3.1 | BCJK | 3.1 | UJ | MBL,EMPC |
| SIB-SW-WR428-050522 | 2,3',6-TRICHLOROBIPHENYL (27) | 2.55 | JK | 2.55 | J | EMPC |
| SIB-SW-WR428-050522 | 2,4',5-TRICHLOROBIPHENYL (31) | 5.2 | BJ | 5.2 | U | MBL |
| SIB-SW-WR428-050522 | 2,4',6-TRICHLOROBIPHENYL (32) | 3.17 | JK | 3.17 | J | EMPC |
| SIB-SW-WR428-050522 | 3,4,4'-TRICHLOROBIPHENYL (37) | 2.95 | JK | 2.95 | J | EMPC |