Appendix G3 - Assessment of Controls (PCB Source Tracking)

Bush River Watershed Polychlorinated Biphenyls (PCBs) Phase I Source Track Down Investigation: Sampling and Analysis Results Report Harford County, Maryland

Prepared for:

Harford County Department of Public Works
Watershed Protection and Restoration
212 South Bond Street, 1st Floor
Bel Air, Maryland 21014

Prepared by:

Tetra Tech, Inc.
10711 Red Run Blvd., Suite 105
Owings Mills, Maryland 21117

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Table of Contents

Acronyms and Abbreviations

C13	carbon-13
EPA	U.S. Environmental Protection Agency
GPS	Global Positioning System
HASP	health and safety plan
HOC	hydrophobic organic compound
MDE	Maryland Department of the Environment
MDL	method detection limit
MRL	method reporting limit
mL	milliliter
MS4	municipal separate storm sewer system
ND	not detected
ng/g	nanograms per gram
PE	polyethylene
PCBs	polychlorinated biphenyls
PDF	portable document format
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
pg/L	picograms per liter
PRC	performance reference compound
SAP	sampling and analysis plan
SW-WLA	stormwater wasteload allocation
TD	trackdown
TMDL	total maximum daily load
WIP	watershed implementation plan
°C	degrees Celsius

1. Introduction

In 2016, the U.S. Environmental Protection Agency (EPA) approved the Bush River Total Maximum Daily Load (TMDL) for polychlorinated biphenyls (PCBs) that was established by the Maryland Department of the Environment (MDE, 2016). Under Harford County's Municipal Separate Storm Sewer System (MS4) permit, the County is required to develop implementation plans to address stormwater wasteload allocations for the waterbodies in the County that have EPA-approved TMDLs.

In August 2022, MDE issued its "Guidance for Developing Local PCB TMDL Stormwater Wasteload Allocation (SW-WLA) Watershed Implementation Plans (WIPs)" (MDE, 2022). The guidance includes methods for identifying potential sources of PCBs, as well as sample collection and analysis methodology. As detailed in the guidance, elements of the PCB source tracking investigations include PCB source assessment, subwatershed prioritization, and a multi-phase source trackdown investigation (Table 1). The multi-phase PCB source trackdown investigation includes:

- Phase I: Subwatershed PCB screening
- Phase II: In-stream subwatershed PCB characterization
- Phase III: MS4 PCB characterization

This report documents Phase I Source Trackdown Investigation activities conducted for Harford County during 2024.

Table 1. PCB trackdown steps (MDE, 2022).

1. PCB Source Assessment	a. Desktop analysis to identify potential sources of PCBs in TMDL subwatersheds
	b. Desktop analysis to identify sources of PCBs for Phase II source trackdown investigations
2. Subwatershed Prioritization Strategy	
3. Multi-phase Source Trackdown Investigation	a. Subwatershed PCB Screening (Phase I Source Trackdown Investigations)
	b. In-stream Subwatershed PCB Characterization (Phase II Source Trackdown Investigations)
	c. MS4 PCB Characterization (Phase III Source Trackdown Investigations)

1.1. PCB BACKGROUND INFORMATION

PCBs are a class of 209 synthesized organic chlorine compounds (known as *congeners*) commercially manufactured from 1929 to 1979. These compounds were widely used from the 1940s to the 1970s in manufacturing industries for their fire-retardant and insulating properties. In 1979, implementation of the Toxic Substances Control Act (Title 15 of the United States Code § 2601 et seq.) banned PCB use in the United States. The primary risks to human health and ecological concerns related to PCB exposure arise from the bioaccumulation of PCBs in the aquatic food chain. PCBs in sediment enter the aquatic food web via exposure to benthic organisms and through flux (migration) of chemicals into the surface water column. Sediment hydrophobic organic compounds such as PCBs can be taken up by pelagic or benthic organisms

through ingestion and dermal absorption, and subsequently passed on to organisms higher in the food chain, including humans.

1.2. PROJECT HISTORY

Tetra Tech identified the subwatersheds within the Bush River watershed with the greatest potential for containing PCB sources during a desktop PCB source assessment and subwatershed prioritization project completed in November 2022 (Tetra Tech, 2022). These subwatershed prioritization results were used to inform the establishment of subwatershed groupings to be sampled in Phase I field investigations.

Sampling for Phase I investigations was conducted during summer to fall 2024 using passive PCB samplers to assess the PCB concentrations present in surface waters at the downstream portion of the subwatersheds. For the collection of subwatershed monitoring data, it is important to use methodologies that can be successfully repeated. To support the collection of consistent, repeatable data, methods following established protocols, as outlined in the Bush River Phase I PCBs Sampling and Analysis Plan (SAP; Tetra Tech, 2024a), were applied in the monitoring efforts.

The approach in the SAP included the in-situ measurement of PCBs in surface waters. Future investigations will include Phase II in-stream PCB characterizations within specific subwatersheds identified during Phase I, and Phase III characterizations of PCB concentrations within the MS4 network at locations identified during Phase II.

2. Methods

The overall approach for the Phase I PCB source track down investigation involved the passive sampling of surface waters in non-tidal streams of the Bush River watershed. In accordance with the procedures described in the Bush River Phase I PCB trackdown investigations SAP (Tetra Tech, 2024a) and the accompanying quality assurance project plan (QAPP) (Tetra Tech, 2024b), Tetra Tech conducted all planning, field activities, and reporting of findings. SiREM (under subcontract to Tetra Tech) provided passive PCB sample media to Tetra Tech for deployment in accordance with the procedures in the project SAP and QAPP. The Tetra Tech field team assembled and deployed the passive PCB samplers at sampling locations in the Bush River watershed and retrieved the samplers after 90-days. Tetra Tech submitted the passive sample media for extraction and analysis by Eurofins TestAmerica – Knoxville (as part of a subcontract agreement with SiREM) using EPA Method 1668A (USEPA, 2003). Tetra Tech has prepared this final report detailing the field deployment, collection, laboratory analyses, and interpretation of the data. Data will also be submitted to Harford County in Microsoft © Excel spreadsheets.

2.1. SITE SELECTION

This investigation targeted 24 locations within the watershed to collect in situ passive PCB measurements. The initial candidate sample locations, documented in the project SAP and QAPP, were selected using GIS data. Sites with varying potential for PCB sources were selected based upon the results of Tetra Tech's PCB source assessment and subwatershed prioritization desktop investigation (Tetra Tech, 2022). In accordance with MDE (2022) guidance, sampling site locations were selectively placed near the downstream end of each subwatershed. These subwatersheds have an average drainage area of 5.60 square miles, ranging from 1.16 to 10.69 sq. miles.

Two reference sites were sampled to represent background conditions. These sites are in perennial streams in non-urban areas, or areas unlikely to be sources of PCBs based on land use data and the findings of the desktop source assessment (Tetra Tech, 2022). Four non-tidal sampling locations used by MDE in the Bush River TMDL development were also included in the set of sample sites.

Prior to sampling activities, Harford County staff used landowner contact information to obtain permission for field crews to access sites. Final sample locations were determined based on landowner permission response as well as accessibility in the field. In some cases, nearby alternate sites, which had also been mapped during the site selection stage, were used in place of primary site locations. These sites are designated with an "A" at the end of the site name. In a few situations, new alternate sites were identified in the field and permissions were confirmed; these sites are named with "A_2" at the end of the site name. The final map and list of 24 field sites is presented in Section 4.1.

2.2. MOBILIZATION

The Tetra Tech field operations leader coordinated the mobilization of personnel and materials to the field. Mobilization included locating the appropriate equipment required for the field tasks, the purchasing of necessary equipment as required, assembling the sampling devices, and staging of equipment for field deployment. Mobilization began in June 2024, and included the following:

- Preparation of equipment and sample media
- Deployment of equipment and materials to the site locations
- Implementation of the following:
  - project-specific health and safety plan (HASP)
  - emergency response plan
  - quality assurance project plan (QAPP)
  - data management plan

After the 90-day sampling period, demobilization activities commenced, which included:

- removal of samplers, equipment, and materials from the site,
- general site cleanup and removal of trash,
- shoreline surface restoration/landscaping repair as necessary, and
- management of investigation-derived waste.

Safety requirements were addressed in detail in a project-specific Tetra Tech HASP. Prior to the beginning of field operations and after obtaining any needed landowner permissions, Tetra Tech personnel reviewed the HASP to ensure an understanding of all safety procedures. Tetra Tech conducted daily mandatory health and safety tailgate meetings before each day of fieldwork and all Tetra Tech field personnel signed the daily health and safety briefing form as specified in the HASP.

2.3. SAMPLING METHODS

The analytical laboratory, Eurofins TestAmerica – Knoxville (hereafter called Eurofins), was responsible for PCB analysis on the polyethylene (PE) membranes prepared by SiREM. Tetra Tech was responsible for the deployment and retrieval of the passive samplers as well as data analysis and characterization. Specific procedures with details for the analytical methods provided in the laboratory QAPP documents were included as Appendices to the project QAPP (Tetra Tech, 2024b), including the following:

- SiREM SP3 Preparation Procedure;
- Polyethylene Passive Sample Procedural Note for TestAmerica Knoxville SOP KNOX-OP-0023 Rev 4; and
- TestAmerica Knoxville SOP for Analysis of Polychlorinated Biphenyl (PCB) Isomers by Isotope Dilution HRGS/HRMS).

2.3.1. Preparation of Passive Sampling Media

Initial laboratory work included the preparation of the selected passive sampling media and construction of samplers for deployment in the field. SiREM personnel implemented procedures for the cleaning of sample media (PE sheets) using a strong solvent (e.g., methylene chloride), mild solvent (i.e., methanol), and deionized water (Fernandez et al., 2009). SiREM prepared the cleaned sampling media and spiked the media with five carbon-13- (C13-) labeled PCB congeners as performance reference compounds (PRCs) (Gschwend et al., 2012) by exposing

each to the prepared solution of PRCs in a methanol/water mixture for a minimum of one week (Booij et al., 2002). The PRCs included the following: C13-PCB28, C13-PCB52, C13-PCB101, C13-PCB153, and C13-PCB159. These PRCs were not used as a surrogate or internal standard by Eurofins and do not co-elute with other potentially present congeners. After impregnation of the passive sample media in the methanol-water solution, the sampling media was kept in bottles with deionized water prior to deployment to remove any methanol sorbed into the passive sampler.

As part of the initial QA/QC used in preparation of the sampling media, a minimum of one sample of prepared and spiked media was analyzed with each batch of passive sampling media prepared, to ensure the sampling media was clean following preparation. Four samples were collected for extraction and analysis following the PRC spiking to verify the effectiveness of the spiking procedure. Each sheet was cut in two with half used for the analysis and the other half archived frozen for potential reanalysis. The target relative standard deviation for the PRC concentration on the sampling media is within 10% for the sampling media to be usable in the field (Gschwend et al., 2012). Once the sampling media met this criterion, individual sampling media were packaged in a clean sample container with approximately one milliliter (mL) of deionized water to keep the sampling media moist. The sampling media was kept at 4 degrees Celsius (ºC) and shipped in a sealed container.

2.3.2. Surface Water Sampling

Surface water samples were collected in the field using 4- by 8-inch sheets of 1 mil (25 micron) PE sampling media following the detailed procedures further described in the SAP. This deployment used the standard SP3™ sampler design for PCB congeners, consisting of a sheet of PE media housed in a steel-mesh envelope and attached to a stainless-steel support plate.

To meet project objectives, two mobilizations were necessary: one to deploy the passive surface water samplers, and a second to retrieve the surface water samplers after 90-days (or at 120- days when necessary). Additional field checks, at approximately 30-days and 60-days post deployment, were scheduled to ensure the passive water samplers remained in place and in good condition. Sampler deployment was conducted July 1 to 3, 2024 and most samplers were retrieved after approximately 90-days (September 30 to October 2, 2024).

In the field, specific sampling locations were selected in low to moderate stream flow areas and were accessed by wading in the stream. Passive samplers were hand placed in the appropriate sampling location on the stream bed. At each site, field staff deployed one sampling media, housed within a steel mesh envelope, which was tethered to a concrete block (Figure 1) secured to the stream bed by rebar, in areas of high flow or deposition. The concrete block was tethered firmly to some form of nearby stable shore structure (e.g., tree, outfall pipe, boulder) to prevent storm events from washing away the sampling apparatus. The location of the sampler was recorded with GPS, photos of the site were taken, and flagging tape was placed on the rebar of the sampler for easier locating.

Figure 1. Example of surface water sampling apparatus used to support sampling media for PCB sampling.

Field sites were visited at approximately 30- and 60-days post-deployment to confirm that samplers were still in place and to make any needed repairs to the sampler apparatus. Each sample location was confirmed using a portable GPS unit. Samplers were returned to the original location if they had moved during deployment (Figure 2). Standard repairs made during the 30- and 60-day checks included replacing faded sampler labels, applying zip ties to keep sampling media secure, and removing accumulated debris from sampling apparatus. After approximately 90-days of exposure to the water column, the samplers were retrieved. Upon retrieval, the integrity of the sampler was thoroughly inspected, and any problems were noted.

During retrieval, the sampling media were carefully removed from the water column by gently pulling upward (vertically) and were rinsed with deionized water to remove any debris. The sampling media were then placed into the original envelopes with approximately one milliliter of deionized water, to prevent the sampling media from drying out, and then transported to Tetra Tech's laboratory. Samples were shipped to the Eurofins laboratory overnight in a cooler with ice.

Figure 2. Repairs being made to surface water sampling device during a 30-day check.

2.3.3. Sample Preservation

All samples sent to the Eurofins laboratory for analysis were preserved on ice at 4°C to prevent degradation of chemicals in the samples. Specified holding times were met to maintain the integrity of the sample.

Requirements for the sample containers, preservatives, and holding times to be used during the investigation are provided in Table 2.

Table 2. Summary of PCB congener analysis requirements including sample containers, preservative and holding times.

Analysis Type	Matrix	Container Size	Holding Time	Preservation
PCB congeners	PE (Passive samplers – surface water)	sampling sheet in sample container with 1 mL of water (after 90-day exposure)	Primary: 7 days extraction/40 days analysis Archive: 1 year for extraction	Ice (4 ±2 °C) Frozen (-20 °C)

Note: Holding time is from the date of sampling or sampler retrieval. Samples should be analyzed as soon as possible after collection. The times listed are the maximum times that samples may be held before analysis without being qualified.

2.3.4. Equipment Decontamination

Sampling equipment (e.g., stainless steel envelopes) was decontaminated at Tetra Tech's ecological laboratory in Owings Mills, Maryland prior to site deployment. Decontamination consisted of the following steps:

- Alconox® and potable-water wash
- Potable-water rinse
- Reagent grade isopropanol rinse (achieved by thoroughly wetting the equipment with isopropanol)
- Analyte-free water rinse
- Air drying

2.3.5. Waste Management

Investigation-derived waste, consisting of equipment rinse water and personal protective equipment (e.g., nitrile gloves), was generated during this sampling event. After retrieval and processing of the sampling media, each sampler was rinsed in site water and returned to Tetra Tech's laboratory facility for storage. Site water that was used to rinse and remove debris from the sampler was returned to the same body of water from which it came. Personal protective equipment items were dry brushed to remove any gross soil/sediment, placed in trash bags, and disposed of in a Tetra Tech-designated trash container.

2.4. LABORATORY METHODS FOR PCB ANALYSIS

EPA Method 1668A was used for the analysis of sampling media to determine concentrations of PCB congeners and PCB PRCs. PRCs are 10 PCB congeners including PCB 14, 36, 78, 104, 121, 142, 155, 184, 192, and 204, which are rarely found in the environment and are used to evaluate the sampling kinetics of the sampler during the exposure period. Since they are added to

the sampler in the laboratory prior to analysis, a value for these 10 PCBs cannot be reported (although by assumption, due to their rarity, they would not be detectable).

Appendix A summarizes the MDE detection limits for aqueous samples as well as the detection limit and achievable reporting limit for the SiREM samplers. There were 161 PCB congener analytes able to be reported by the Eurofins analytical chemistry laboratory. Most of the 161 analytes are single congeners, although some congeners co-elute and are reported as grouped PCB analytes. For example, PCB-21 and PCB-31 are not reported individually but are reported as a single PCB-21/31 result.

3. Data Management

Data handling procedures followed by the laboratory met the requirements set forth in the project QAPP. All analytical and field data are maintained in Tetra Tech project files. The project files contain copies of the chain of custody forms, sampling log forms, sampling location maps, and QA/QC documentation.

3.1. DATA TRACKING AND CONTROL

A standard sample tracking system was used for samples throughout the investigation. Prior to field mobilization, the field operations leader coordinated and initiated the sample tracking protocols. Sample labels included the site identification and deployment date and were handwritten in the field or preprinted before entering the field.

Labels were reviewed for accuracy by a second staff member for adherence to SAP requirements. The field operations lead coordinated with the analytical laboratory personnel to ensure that they were aware of the number and type of samples, and associated analyses, they were to receive. Once field sampling was completed, the field operations leader forwarded the chain of custody forms to the laboratory with sample batches.

After successful completion of all requested analyses, the SiREM laboratory submitted an electronic database deliverable to Tetra Tech for every sample delivery group. When all electronic database deliverables were received from the laboratory, the PM/designee ensured that the laboratory performed all requested analyses.

3.2. SAMPLE INFORMATION

Field notes, including sampler deployment and retrieval notes and site observations (e.g., weather conditions, sample flow conditions), were recorded in a tablet-based electronic datasheet using the Survey 123 app during site deployment and subsequent site visits. Digital photographs of each sampler location were taken to document conditions. Field data were summarized and presented in tabular form. Analysis of laboratory data entailed processing raw data instrument output into reportable results. Laboratory data were verified by the Eurofins group supervisor and then by the Eurofins QA Officer before results were submitted to Tetra Tech.

3.3. PROJECT DATA COMPILATION

The analytical laboratory generated a portable document format (PDF) file of the analytical data packages, as well as electronic database deliverables in Microsoft© Excel format. The electronic database was checked against the PDF file provided by the laboratory.

4. Results

4.1. SUMMARY OF SAMPLER DEPLOYMENT

Samplers were deployed at 24 locations in the Bush River watershed (Figure 3). Site field coordinates, deployment and retrieval dates, and number of days deployed are summarized in Table 3. Notes from field visits were recorded electronically and are included in Appendix B.

During the 30- and 60-day field checks, three samplers (JR-201, PR-77, UT-66_A2) were noted as having been out of the water, each for an unknown period of time. After consultation with the analytical laboratory and with Harford County staff, the team decided to leave these three samplers out for approximately 120-days, and to calculate PCB concentrations as if samplers had been deployed either 90- or 120-days, which would enable the laboratory to provide a bracketed range of concentrations for interpretation. These samplers were retrieved October 29, 2024.

One sampler, at site DSB-85, was missing during the 30-day field visit on August 2, 2024. The missing sampler was replaced, on the same day, and remained in the field for approximately 90-days. The sampler was collected from the field on October 29, 2024.

One sampler, at WR-231A, was found to be missing during its planned 90-day retrieval. As a result, no samples were analyzed for this site.

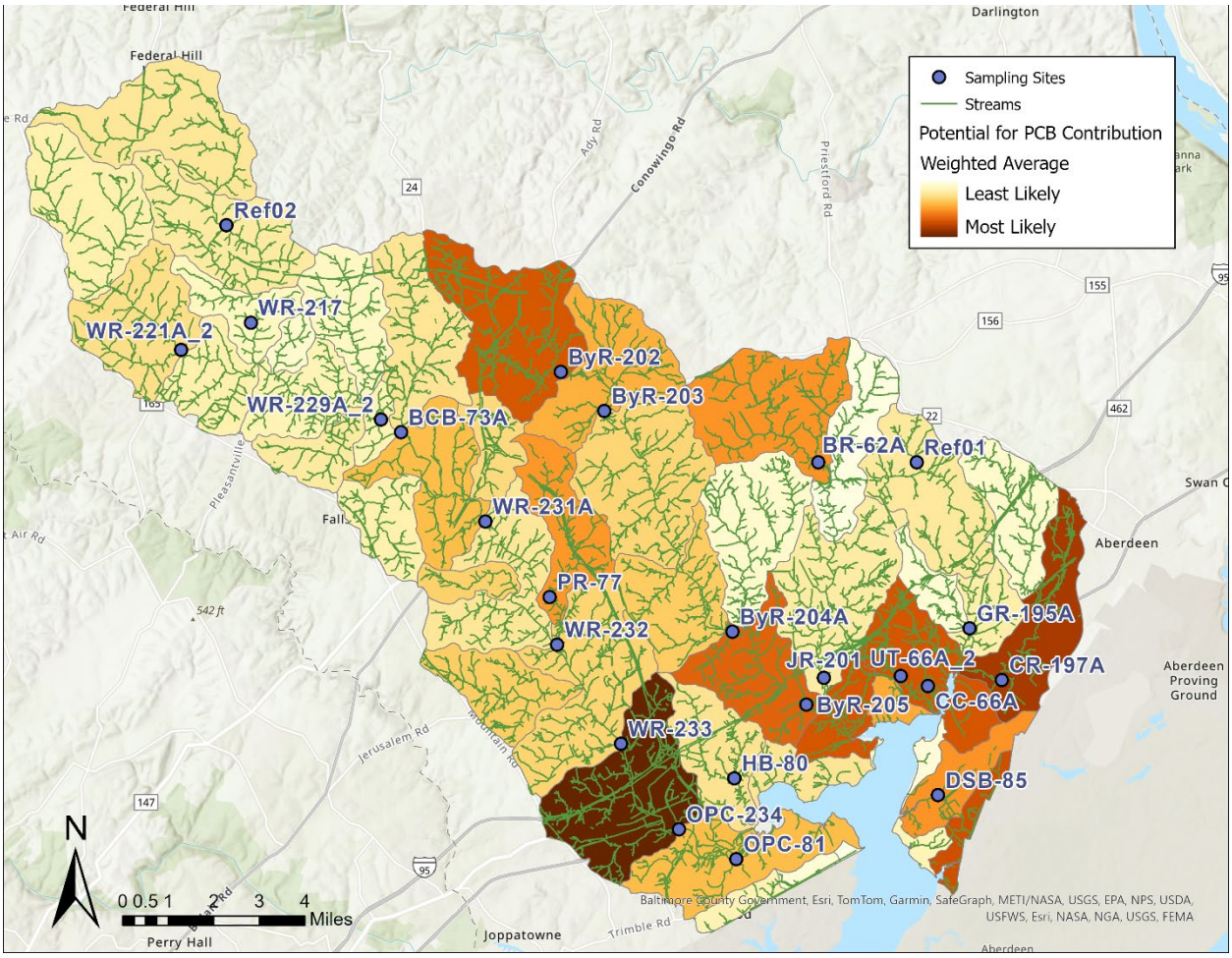

Figure 3. Final selection of 24 sites for Phase I PCB source trackdown sampling in Bush River watershed. Subwatershed shading depicts potential for PCB contributions from earlier subwatershed prioritization analysis (Tetra Tech, 2022).

Table 3. Site locations, deployment and retrieval dates, and total number of days deployed.

Site ID	Stream Name	Latitude	Longitude	Deployed	Retrieved	Days Deployed
BCB-73A	Bear Cabin Branch	39.53654754	-76.39462068	7/1/2024	9/30/2024	91
BR-62A	Broad Run	39.52924044	-76.26216903	7/2/2024	9/30/2024	90
ByR-202	Bynum Run	39.55127561	-76.34391579	7/1/2024	9/30/2024	91
ByR-203	Bynum Run	39.54175848	-76.33010376	7/1/2024	9/30/2024	91
ByR-204A	Bynum Run	39.48783567	-76.28942502	7/2/2024	9/30/2024	90
ByR-205	Bynum Run	39.47035487	-76.26633745	7/2/2024	10/2/2024	92
CC-66A	Church Creek	39.47455921	-76.22744233	7/2/2024	10/1/2024	91
CR-197A	Cranberry Run	39.47603253	-76.20402766	7/2/2024	10/1/2024	91
DSB-85	Deep Spring Branch	39.44783242	-76.22417857	8/2/2024	10/29/2024	88
GR-195A	Grays Run	39.4886181	-76.21424775	7/1/2024	10/1/2024	92
HB-80	Haha Branch	39.45200068	-76.28878211	7/1/2024	10/2/2024	93
JR-201	James Run	39.47654054	-76.26041887	7/1/2024	10/29/2024	120
OPC-234	Otter Point Creek	39.439484	-76.306338	7/1/2024	10/2/2024	93
OPC-81	Otter Point Creek	39.432213	-76.288222	7/1/2024	10/2/2024	93
PR-77	Plumtree Run	39.49630105	-76.34738084	7/1/2024	10/29/2024	120
Ref01	Winters Run	39.52921187	-76.23098459	7/2/2024	9/30/2024	90
Ref02	East Branch Winters Run	39.58706658	-76.44998346	7/1/2024	9/30/2024	91
UT-66A_2	Unknown Tributary	39.47686059	-76.23644713	7/2/2024	10/29/2024	119
WR-217	East Branch Winters Run	39.56333308	-76.44220211	7/1/2024	9/30/2024	91
WR-221A_2	West Branch Winters Run	39.556685	-76.464304	7/2/2024	9/30/2024	90
WR-229A_2	Winters Run	39.539669	-76.40092	7/3/2024	9/30/2024	89
WR-231A	Winters Run	39.51475	-76.3678	7/1/2024	N/A	N/A
WR-232	Winters Run	39.48468386	-76.34502855	7/1/2024	9/30/2024	91
WR-233	Winters Run	39.460418	-76.32483304	7/1/2024	9/30/2024	91

4.2. TOTAL DISSOLVED PCB RESULTS AND COMPARISONS TO THRESHOLD VALUES

Data from passive samplers were used to derive freely dissolved concentrations (C_{free}) of PCB congeners. Individual congener results were then summed to derive a total PCB C_{free} value for each sampler. A summary of these total dissolved PCB results (C_{free}) is shown in Figure 4 (map), Figure 5 (graph), and Table 4. In Figure 6, site results are mapped along with subwatershed ratings from the PCB source assessment and subwatershed prioritization analysis (Tetra Tech, 2022).

Total dissolved PCB values ranged from 9.6 to 379.4 picograms per liter (pg/L). A complete table of C_{free} results for all individual congeners and total PCBs at each site is provided in Appendix C. An accompanying Microsoft© Excel file including these data is being provided to Harford County.

For the three samplers that had been deployed for 120 days, the calculated values for C_{free} for 90 and 120 days did not differ. This supported the robustness of the calculation model and showed that the time the samplers may have been out of the water did not influence the C_{free} values. There were slight variations in the elimination rate values used for the calculations, showing a change with the amount of time; however, that change was not large enough to make a difference in the final PCB results.

In accordance with MDE's PCB TMDL Implementation Plan Guidance (MDE, 2022), two threshold values were used to evaluate results. First was a reference threshold based on results from the two reference monitoring sites. Laboratory total dissolved PCB concentrations (C_{free}) from the reference subwatershed monitoring sites were 86.3 pg/L for REF01 and 52.1 pg/L for REF02. The average of these two reference sites (69.2 pg/L) was used as the reference threshold.

The second threshold for comparisons was the TMDL water column endpoint, as designated in the Bush River PCB TMDL (MDE, 2016). This value of 120 pg/L was used as the TMDL endpoint, with no further conversion. As noted in the MDE (2022) guidance, while passive samplers analyze the freely dissolved concentrations (C_{free}) of PCBs, the TMDL water column endpoints are derived based on total PCB concentrations from all fractions (i.e., dissolved organic carbon (DOC) bound PCBs, particulate organic carbon (POC) bound PCBs, and freely dissolved PCBs). Still, the TMDL endpoint serves as a useful basis of comparison, and comparisons followed MDE guidance as discussed in Section 4.3 below.

Thirteen sites had total dissolved PCBs less than the reference threshold of 69.2 pg/L. Four sites (CR-197A, OPC-81, WR-221A_2, and WR-229A_2) had total dissolved PCBs greater than the reference threshold (69.2 pg/L) but less than the TMDL water column endpoint of 120 pg/L. Four sites (ByR-202, ByR-203, ByR-205, and PR-77) had total dissolved PCBs (C_{free}) greater than the TMDL water column endpoint value.

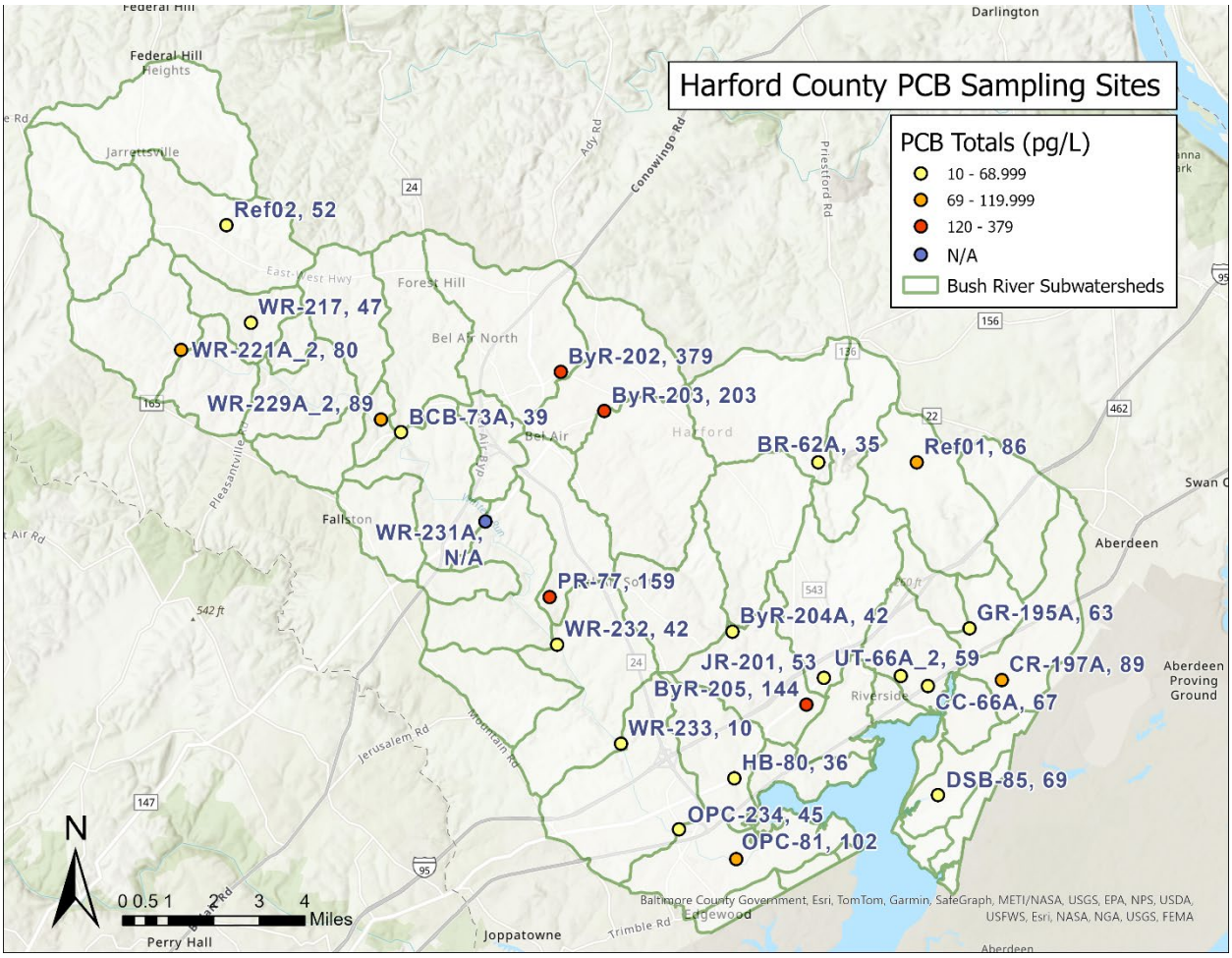

Figure 4. Sampling sites and total PCB concentrations (C_{free}) for the Phase I PCB source trackdown investigation in Bush River watershed, Harford County. Sites are represented by site name and rounded total dissolved PCB concentration (pg/L). Colored circles represent categories of PCB results in comparison with TMDL endpoint and reference values.

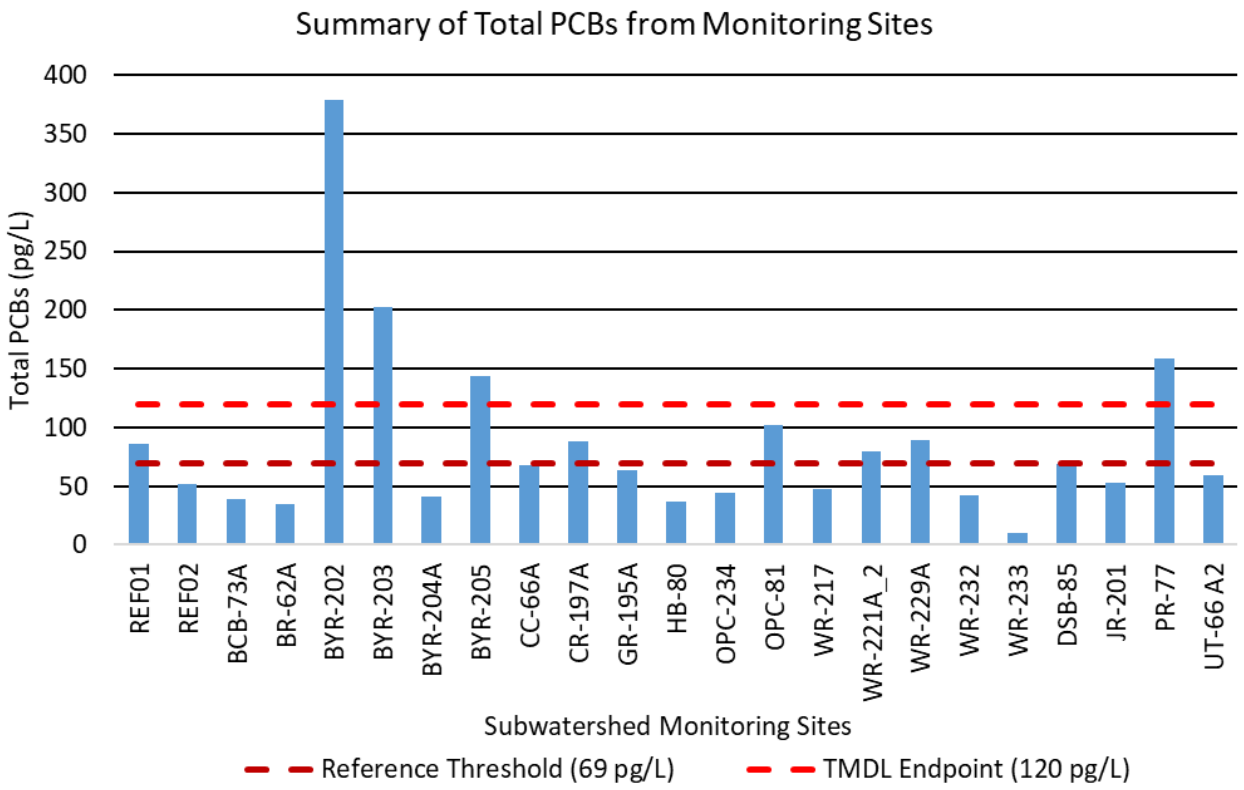

Figure 5. Summary of total dissolved PCBs (C_{free}) in water. The reference threshold is represented by the dashed dark red line while the TMDL water column endpoint (TMDL Endpoint) is represented by the bright red dashed line.

Table 4. Summary of total dissolved PCBs (C_{free}) in water for sites sampled in Bush River watershed in 2024 and comparisons with reference threshold and TMDL water column endpoint values.

Site ID	Total PCBs (pg/L)	Exceeds or is Equal to Reference Threshold (69.2 pg/L)	Exceeds TMDL Water Column Endpoint (120 pg/L)
REF01	86.3		
REF02	52.1		
Average Reference Result	69.2		
BCB-73A	38.7		
BR-62A	34.7		
BYR-202	379.4	X	X
BYR-203	203.1	X	X
BYR-204A	41.6		
BYR-205	144.3	X	X
CC-66A	67.5		
CR-197A	88.5	X	
DSB-85	68.9		
GR-195A	63.4		
HB-80	36.5		
JR-201	53.2		
OPC-234	44.5		
OPC-81	102.3	X	
PR-77	159.3	X	X
UT-66A_2	59.5		
WR-217	47.3		
WR-221A_2	79.5	X	
WR-229A_2	88.8	X	
WR-232	42.1		
WR-233	9.6		

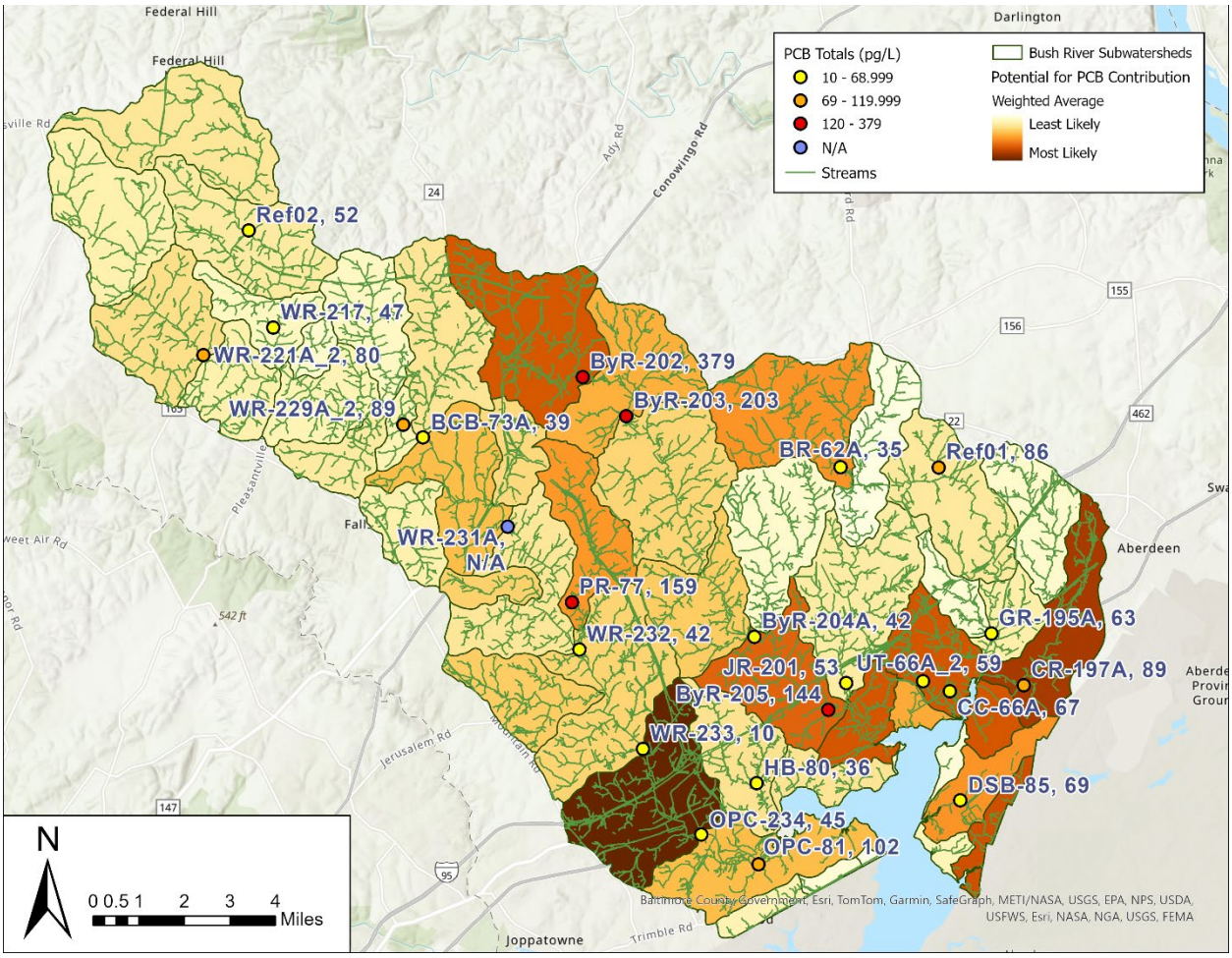

Figure 6. Sampling sites and total PCB concentrations (Cf_{ree}) for the Phase I PCB source trackdown investigation in Bush River watershed, Harford County. Sites are represented by site name and rounded total dissolved PCB concentration (pg/L). Colored circles represent categories of PCB results in comparison with TMDL endpoint and reference values. Subwatershed shading depicts potential for PCB contributions, from earlier subwatershed prioritization analysis (Tetra Tech, 2022).

Analytical results were derived first as nanograms per gram (ng/g) and then calculated as pg/L using a model that accounted for time of deployment. The concentrations from the 10 PRCs were measured in the field blank (n = 1, 470 – 2800 ng/g) and laboratory control blanks (n = 3, average values ranging from 510 – 2867 ng/g) as positive controls. The concentrations of PRCs in the exposed samplers and blanks were used to estimate a compound-specific mass transport rate for each sampler. The field blank PCB concentrations showed no anomalies associated with sample deployment. Further, results demonstrated that there was minimal loss of congener concentrations in the field blank during deployment and supported the overall reliability of the sampling method.

Of the sampled monitoring sites, six sites had individual PCB congeners that did not reach at least 10% of steady state during deployment. This could have happened due to variability in the sampling environment or the physical and chemical properties of the freely dissolved PCB congeners. These sites and congeners included CR-197A (PCB 209), HB-80 (PCB 194-197, 200-201, 203, 205-209), REF-01 (PCB 209), WR-221A_2 (PCB 209), WR-229A (PCB 180/193, 181-182, 187, 189-191, 194-197, 200-203, 205-209), and DSB-85 (PCB 209). These congener concentrations were reported with a "*L*" qualifier in the laboratory summary file (Appendix C). While this suggests some variability in the precision of the elimination rate (k_e) for these congeners, their contribution to the total PCBs concentration was minimal.

4.3. INTERPRETATION OF PHASE I SUBWATERSHED PCB SCREENING TRACKDOWN RESULTS

The total PCB concentrations (C_{free}) at subwatershed monitoring sites were used to determine whether subwatersheds will or will not require further source trackdown investigations under Phase II and which subwatersheds to prioritize, based on the guidance provided by MDE (MDE 2022). Threshold values and additional components of MDE's guidance were employed in making determinations. As per MDE guidance (MDE, 2022):

> For subwatershed monitoring sites with PCB concentrations above reference thresholds, but below TMDL water column endpoints, there can be no definitive determination as to whether there are significant sources of PCBs within the subwatershed. While passive samplers analyze the freely dissolved portion of the total PCB concentration, the TMDL water column endpoints are derived based on total PCB concentrations (i.e., dissolved organic carbon (DOC) bound PCBs, particulate organic carbon (POC) bound PCBs, and freely dissolved PCBs). Therefore, it is possible that the total PCB concentration containing the freely dissolved portion measured through passive sampling could exceed the TMDL water column endpoint. In these cases, MDE will determine whether these subwatersheds can be ruled out for further source trackdown investigations based on the existing data and information provided by the PCB Source Assessment, or if additional sampling may be required. As these subwatersheds will be ranked lower under the prioritization strategy, jurisdictions should focus resources on subwatersheds with the highest rankings.

A decision matrix (Figure 7) was used to determine if further source trackdown investigations are needed. Proposed priorities for subwatershed Phase II trackdown monitoring were then assigned as follows:

- **Tier 1:** subwatersheds with site having total PCBs exceeding TMDL water column endpoint value
- **Tier 2:** subwatersheds with site having total PCBs exceeding reference threshold but below TMDL water column endpoint value
- **Tier 3:** subwatersheds with site having total PCBs below reference threshold and TMDL water column endpoint value, but had a lower value compared to upstream sites with higher value
- **n/a:** subwatersheds not recommended for Phase II monitoring

Decisions are summarized in Table 5.

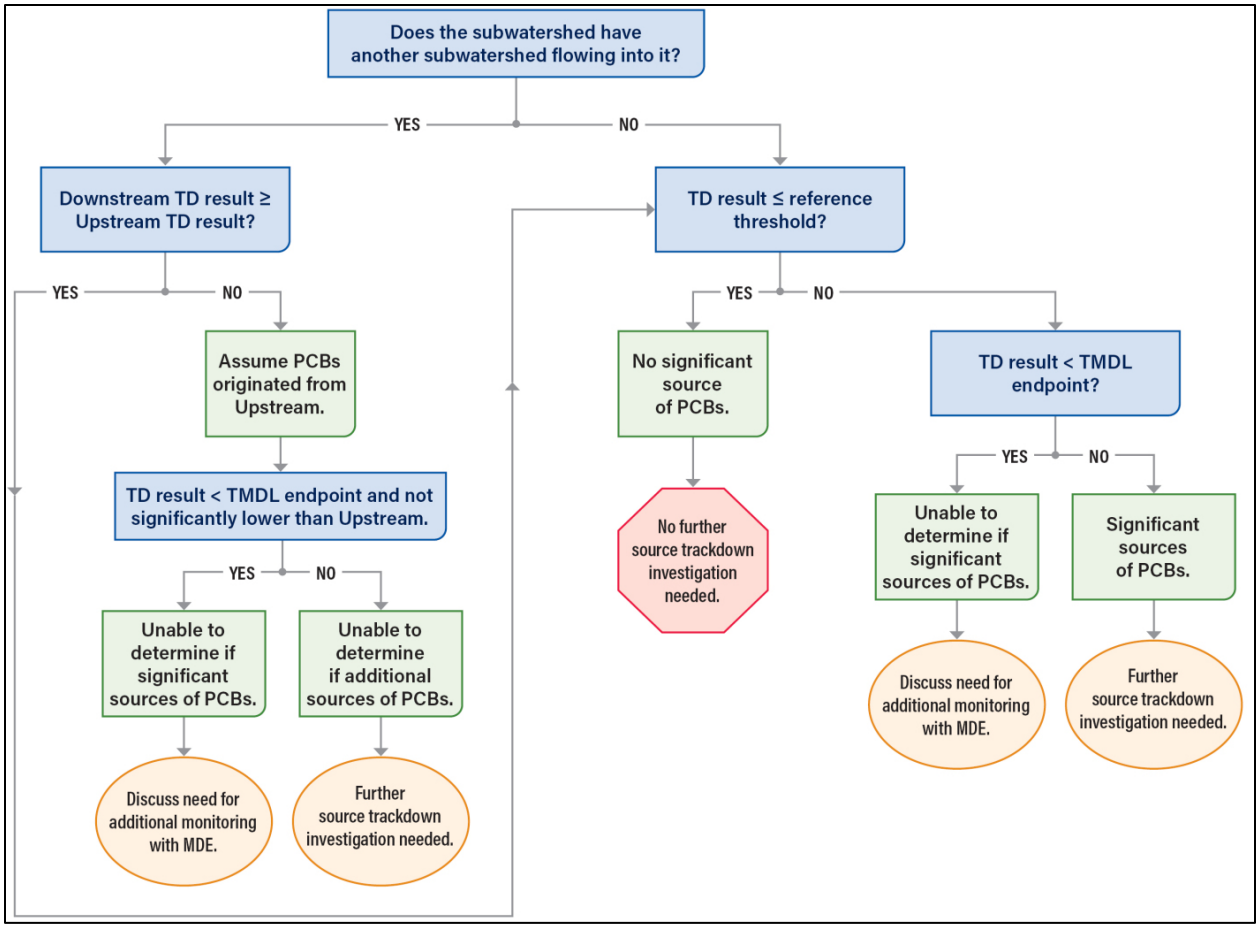

Figure 7. Phase I Source Trackdown Investigation Decision Matrix based on screening trackdown (TD) result.

Subwatershed Monitoring Sites Summary

BCB-73A

- Concentration: 38.7 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of WR-229_2 (79.5 pg/L).
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

BR-62A

- Concentration: 34.7 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

ByR-202

- Concentration: 379.4 pg/L (higher than Reference; higher than TMDL endpoint)
- Upstream/downstream status: Downstream of ByR-203 (203.1 pg/L).

- Conclusion: Significant source of PCBs. Further source trackdown investigation is needed.

ByR-203

- Concentration: 203.1 pg/L (higher than Reference; higher than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Significant source of PCBs. Further source trackdown investigation is needed.

ByR-204A

- Concentration: 41.6 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of ByR-203 (203.1 pg/L).
- Conclusion: Unable to determine significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.

ByR-205

- Concentration: 144.3 pg/L (higher than Reference; higher than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Significant source of PCBs. Further source trackdown investigation is needed.
- Note: Site was also sampled by MDE, under the name ByR-1, during the development of the TMDL.

CC-66A

- Concentration: 67.5 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.
- Note: Site was also sampled by MDE, under the name BuR-7, during the development of the TMDL.

CR-197A

- Concentration: 88.5 pg/L (higher than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.
- Note: Site was also sampled by MDE, under the name BuR-7, during the development of the TMDL.

DSB-85

- Concentration: 68.9 pg/L (less than Reference; less than TMDL endpoint)

- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

GR-195A

- Concentration: 63.4 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

HB-80

- Concentration: 36.5 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

JR-201

- Concentration: 53.2 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

OPC-234

- Concentration: 44.5 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of WR-233 (9.6 pg/L).
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

OPC-81

- Concentration: 102.3 pg/L (higher than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of WR-233 (9.6 pg/L).
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.
- Note: Site was also sampled by MDE, under the name LWR-1, during the development of the TMDL.

PR-77

- Concentration: 159.3 pg/L (higher than Reference; higher than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Significant source of PCBs. Further source trackdown investigation is needed.

UT-66_A2

- Concentration: 59.5 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

WR-217

- Concentration: 47.3 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: No significant source of PCBs. No further source trackdown investigation needed.

WR-221A_2

- Concentration: 79.5 pg/L (higher than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.

WR-229A_2

- Concentration: 88.8 pg/L (higher than Reference; less than TMDL endpoint)
- Upstream/downstream status: No upstream watershed flowing into subwatershed.
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.

WR-232

- Concentration: 42.1 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of PR-77 (159.3 pg/L).
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.

WR-233

- Concentration: 9.6 pg/L (less than Reference; less than TMDL endpoint)
- Upstream/downstream status: Downstream of WR-232 (42.1 pg/L).
- Conclusion: Unable to determine if there was a significant source of PCBs. Discussion with MDE is needed to determine the need for additional monitoring.

Table 5. Summary of total PCB significant source and resulting decisions and priorities for Phase II monitoring based on sampling results and application of MDE (2022) guidance.

Sampled Subwatershed Site	PCB Source Decision	Resulting Decision	Subwatershed Priority for Phase II Monitoring
BCB-73A	Not significant source	No source trackdown investigation needed	n/a
BR-62A	Not significant source	No source trackdown investigation needed	n/a
ByR-202	Significant source	Further source trackdown investigation needed	Tier 1
ByR-203	Significant source	Further source trackdown investigation needed	Tier 1
ByR-204A	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 3
ByR-205	Significant source	Further source trackdown investigation needed	Tier 1
CC-66A	Not significant source	No source trackdown investigation needed	n/a
CR-197A	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 2
DSB-85	Not significant source	No source trackdown investigation needed	n/a
GR-195A	Not significant source	No source trackdown investigation needed	n/a
HB-80	Not significant source	No source trackdown investigation needed	n/a
JR-201	Not significant source	No source trackdown investigation needed	n/a
OPC-234	Not significant source	No source trackdown investigation needed	n/a
OPC-81	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 2
PR-77	Significant source	Further source trackdown investigation needed	Tier 1
UT-66_A2	Not significant source	No source trackdown investigation needed	n/a
WR-217	Not significant source	No source trackdown investigation needed	n/a
WR-221A_2	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 2
WR-229A	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 2

WR-232	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 2
WR-233	Unable to determine whether significant source	Discussion with MDE is needed to determine need for additional monitoring	Tier 3

4.4. RESULTS FOR INDIVIDUAL CONGENERS

Individual PCB congener concentrations varied among sampled monitoring sites. For this summary, the mean of the two reference concentrations was used as the reference value. In cases where concentrations were not detected (ND), all values that where higher than "0" were considered as exceeding. Individual congener data for all sites are provided in Appendix C.

The congeners that had most frequent occurrences of detection at sampled monitoring sites were:

- PCB-44/47/65 (range = 0.75 – 20 pg/L)
- PCB-118 (range = 0.27 – 2.3 pg/L)
- PCB-129/138/160/163 (range = 0.51 – 4.7 pg/L)
- PCB-147/149 (range = 0.2 – 2.7 pg/L)
- PCB-153/168 (range = 0.39 – 4.1 pg/L)

These congeners were detected in all 23 sampling sites, with most concentrations exceeding the average reference value.

The top five congeners having the greatest number of exceedances (above average reference values) are listed below:

- PCB-61/70/74/76 (17 out of the 23 sites)
- PCB-106 (18 out of the 23 sites)
- PCB-110/115 (19 out of the 23 sites)
- PCB-187 (17 out of the 23 sites)
- PCB- 209 (17 out of the 23 sites)

A summary of congener occurrences and exceedances is presented in Appendix D.

5. Discussion

Results of Phase I source trackdown investigations pointed to several subwatersheds that warrant further monitoring under Phase II. Tetra Tech recommends beginning with the four subwatersheds designated as Tier 1, i.e., those where sampled sites had the highest values for total PCB C_{free}, exceeding the TMDL water column endpoints: ByR-202, ByR-203, ByR-205, and PR-77. Next in priority would be Tier 2 and Tier 3 watersheds identified through sampling results, pending further examination of ancillary information and discussion with MDE.

The sampled sites provided good coverage across the Bush River watershed. During future sampling, the County may want to consider sampling at the location where the PCB sampler was lost (WR-231A) and at any other locations where additional data are judged to be of benefit.

Data for individual congeners can provide clues as to the likely sources of contamination. Future analyses may be able to explore individual congener data, based on patterns of concentrations in particular congeners detected that are typically associated with certain types of watershed sources. This analysis, supplemented with literature research, would assist the County in better understanding and addressing PCB sources in Bush River watershed.

6. References

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Appendix A

Table A-1. Comparison of MDE PCB congener detection limits to approximate passive sampler method detection limits (MDL) and method reporting limits (MRL)

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-1	Mono	24.8	4	400	1
PCB-2	Mono	30.3	0.7	60	1
PCB-3	Mono	21.2	0.9	60	1
PCB-4	Di	18.1	20	300	1
PCB-5	Di	60.4	6	50	1
PCB-6	Di	52.7	6	50	1
PCB-7	Di	32.6	6	50	1
PCB-8	Di	60.4	6	100	1
PCB-9	Di	32.6	6	50	1
PCB-10	Di	18.1	20	100	1
PCB-11	Di	---	2	50	1
PCB-12/13	Di	19.9 / 19.9	3	20	1
PCB-14 (PRC)	Di	PRC	PRC	PRC	1
PCB-15	Di	44.2	3	20	1
PCB-16	Tri	10.0	2	30	1
PCB-17	Tri	9.3	2	30	1
PCB-18[b]/30	Tri	6.5	2	60	1
PCB-19	Tri	5.8	4	50	1
PCB-20/28	Tri	70.8 / 19.5	0.8	30	1
PCB-21/33	Tri	70.8 / 70.8	0.8	20	1
PCB-22	Tri	12.9	0.8	20	1
PCB-23	Tri	---	0.8	20	1
PCB-24	Tri	2.6	2	30	1
PCB-25	Tri	7.0	0.7	20	1
PCB-26/29	Tri	7.9 / 8.8	0.8	20	1
PCB-27	Tri	---	1	30	1
PCB-31	Tri	21.9	0.8	30	1
PCB-32	Tri	10.0	1	30	1
PCB-34	Tri	---	0.8	20	1
PCB-35	Tri	---	0.5	10	1

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-36 (PRC)	Tri	PRC	PRC	PRC	1
PCB-37	Tri	46.2	0.5	10	1
PCB-38	Tri	---	0.6	10	1
PCB-39	Tri	---	0.5	10	1
PCB-40/41/71	Tetra	26.7 / 23.0 / 23.0	0.6	10	1
PCB-42	Tetra	21.0	0.6	10	1
PCB-43/73	Tetra	---	0.6	10	1
PCB-44[b]/47[b]/65	Tetra	33.9 / 86.9	0.5	10	1
PCB-45/51	Tetra	9.7 / 29.8	0.8	10	1
PCB-46	Tetra	20.2	1	10	1
PCB-48	Tetra	86.9	0.6	10	1
PCB-49[b]/69	Tetra	28.8	0.5	10	1
PCB-50/53[b]	Tetra	6.3	0.8	10	1
PCB-52	Tetra	38.1	0.6	10	1
PCB-54	Tetra	---	0.8	10	1
PCB-55	Tetra	---	0.4	8	1
PCB-56	Tetra	4.6	0.3	8	1
PCB-57	Tetra	---	0.3	8	1
PCB-58	Tetra	---	0.3	8	1
PCB-59/62/75	Tetra	---	0.4	10	1
PCB-60	Tetra	4.6	0.4	8	1
PCB-61/70/74/76	Tetra	10.7 / 11.9 / 10.7 / 11.9	0.3	20	1
PCB-63	Tetra	11.2	0.3	8	1
PCB-64	Tetra	23.0	0.4	10	1
PCB-66	Tetra	12.7	0.3	8	1
PCB-67	Tetra	---	0.3	8	1
PCB-68	Tetra	---	0.3	8	1
PCB-72	Tetra	---	0.3	8	1
PCB-77	Tetra	73.1	0.3	6	1
PCB-78 (PRC)	Tetra	PRC	PRC	PRC	1
PCB-79	Tetra	---	0.2	6	1
PCB-80	Tetra	---	0.2	6	1

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-81	Tetra	4.3	0.3	6	1
PCB-82	Penta	40.0	0.5	6	1
PCB-83/99	Penta	19.5 / 11.3	0.4	6	1
PCB-84	Penta	6.6	0.6	7	1
PCB-85[b]/116/117	Penta	25.6	0.4	6	1
PCB-86/87[b]/97[b]/ 109/119[b,c]/125	Penta	29.7 / 12.4 / 18,115.4	0.4	6	1
PCB-88/91[b]	Penta	6.2	0.5	7	1
PCB-89	Penta	18.0	0.6	7	1
PCB-90[b]/101[b]/113	Penta	18.0 / 18.0	0.4	6	1
PCB-92	Penta	2.9	0.4	6	1
PCB-93/100[c]	Penta	23.5 / 168.1	0.5	7	1
PCB-94	Penta	---	0.6	7	1
PCB-95	Penta	14.7	0.5	7	1
PCB-96	Penta	---	0.4	7	1
PCB-98/102	Penta	---	0.5	7	1
PCB-103	Penta	3.7	0.5	7	1
PCB-104 (PRC)	Penta	PRC	PRC	PRC	1
PCB-105[c]	Penta	1,146.2	0.2	5	1
PCB-106	Penta	21.2	0.3	5	1
PCB-107	Penta	42.3	0.3	5	1
PCB-108[b]/124	Penta	42.3	0.3	5	1
PCB-110/115	Penta	95.4 / 29.7	0.3	6	1
PCB-111	Penta	---	0.3	5	1
PCB-112	Penta	---	0.3	6	1
PCB-114	Penta	13.8	0.2	5	1
PCB-118	Penta	21.2	0.2	5	1
PCB-120	Penta	---	0.3	5	1
PCB-121 (PRC)	Penta	PRC	PRC	PRC	1
PCB-122	Penta	---	0.3	5	1
PCB-123	Penta	---	0.3	5	1
PCB-126	Penta	---	0.2	4	1
PCB-127	Penta	---	0.2	4	1
PCB-128[b]/166	Hexa	12.5	0.4	4	1

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-129[b]/138[b] /160/163[b]	Hexa	4.2 / 24.2 / 24.2	0.4	4	1
PCB-130	Hexa	37.9	0.5	4	1
PCB-131	Hexa	---	0.6	4	1
PCB-132	Hexa	23.3	0.6	4	1
PCB-133	Hexa	---	0.5	4	1
PCB-134[b]/143	Hexa	7.2	0.6	4	1
PCB-135/151	Hexa	13.1 / 7.5	0.5	4	1
PCB-136	Hexa	4.0	0.3	4	1
PCB-137	Hexa	37.9	0.4	4	1
PCB-139/140	Hexa	---	0.5	4	1
PCB-141	Hexa	13.0	0.5	4	1
PCB-142 (PRC)	Hexa	PRC	PRC	PRC	1
PCB-144	Hexa	13.1	0.4	4	1
PCB-145	Hexa	---	0.3	4	1
PCB-146	Hexa	14.4	0.4	4	1
PCB-147/149[b]	Hexa	19.7	0.5	4	1
PCB-148	Hexa	---	0.5	4	1
PCB-150	Hexa	---	0.3	4	1
PCB-152	Hexa	---	0.3	4	1
PCB-153/168	Hexa	24.2 / 23.3	0.3	4	1
PCB-154	Hexa	---	0.4	4	1
PCB-155 (PRC)	Hexa	PRC	PRC	PRC	1
PCB-156/157	Hexa	8.1 / 34.7	0.4	3	1
PCB-158	Hexa	7.0	0.3	4	1
PCB-159	Hexa	---	0.3	3	1
PCB-161	Hexa	---	0.3	4	1
PCB-162	Hexa	---	0.3	3	1
PCB-164	Hexa	24.2	0.3	4	1
PCB-165	Hexa	---	0.4	4	1
PCB-167	Hexa	12.5	0.2	3	1
PCB-169	Hexa	---	0.2	3	1
PCB-170	Hepta	34.0	0.2	2	1

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-171[b]/173	Hepta	4.8	0.3	3	1
PCB-172	Hepta	5.2	0.2	2	1
PCB-174	Hepta	9.3	0.2	3	1
PCB-175	Hepta	---	0.2	3	1
PCB-176	Hepta	4.2	0.2	2	1
PCB-177	Hepta	5.2	0.2	3	1
PCB-178	Hepta	5.0	0.2	3	1
PCB-179	Hepta	7.9	0.2	2	1
PCB-180/193	Hepta	26.1 / 7.4	0.2	2	1
PCB-181	Hepta	---	0.2	3	1
PCB-182	Hepta	---	0.2	3	1
PCB-183/185	Hepta	4.7 / 10.4	0.2	3	1
PCB-184 (PRC)	Hepta	PRC	PRC	PRC	1
PCB-186	Hepta	---	0.2	2	1
PCB-187	Hepta	11.8	0.2	3	1
PCB-188	Hepta	---	0.2	2	1
PCB-189	Hepta	12.6	0.1	2	1
PCB-190	Hepta	34.0	0.2	2	1
PCB-191	Hepta	4.9	0.2	2	1
PCB-192 (PRC)	Hepta	PRC	PRC	PRC	1
PCB-194[c]	Octa	1,234.6	0.1	2	1, 2
PCB-195	Octa	27.8	0.1	2	1, 2
PCB-196	Octa	105.4	0.1	2	1, 2
PCB-197	Octa	45.8	0.09	2	1, 2
PCB-198[c]/199	Octa	203.8 / 25.9	0.1	2	1, 2
PCB-200[c]	Octa	287.3	0.09	2	1, 2
PCB-201	Octa	179.6	0.09	2	1, 2
PCB-202	Octa	20.5	0.1	2	1, 2
PCB-203	Octa	105.4	0.1	2	1, 2
PCB-204 (PRC)	Octa	PRC	PRC	PRC	1, 2
PCB-205[c]	Octa	484.6	0.09	2	1, 2
PCB-206	Nona	16.8	0.06	1	1, 2
PCB-207	Nona	19.4	0.04	1	1, 2
PCB-208	Nona	8.3	0.04	1	1, 2

Compound	Homologue Group	MDE Method Detection Limit (pg/L)[a]	Passive Sampler Approximate Freely-dissolved (C_{free}) Estimated MDL (pg/L)	Passive Sampler Approximate Freely-dissolved (C_{free}) MRL (pg/L)	Note
PCB-209	Deca	80.4	0.04	0.8	1, 2

Notes:

[a] In accordance with the information on typical detection limits for 101 PCB congeners or congener groups presented in Table 1 of the *Total Maximum Daily Load (TMDL) Quality Assurance Project Plan (QAPP) PCB Sampling Component* (MDE 2015), the detection limit values from Table 1 presented in units of ng/g were multiplied by 5/13 to calculate a detection limit for water in units of ng/L, which in turn were multiplied by a factor of 1,000 to calculate the values presented here in units of pg/L. Detection limits (ng/g) for PCB congeners presented in Table 1 of the *Total Maximum Daily Load (TMDL) Quality Assurance Project Plan (QAPP) PCB Sampling Component* (MDE 2015) are the mean + 3 standard deviations of contaminant or interference peaks or minimum discernible peak areas (MDPAs) in four reagent blanks divided by a wet (fish) or dry (sediment) mass of 5 grams. MDE (2015) notes that representative MDLs for 13 L water samples (ng/L) may be obtained by multiplying by 5/13.

[b] Detection limit provided for the PCB congener for which a detection limit was presented in Table 1 of the *Total Maximum Daily Load (TMDL) Quality Assurance Project Plan (QAPP) PCB Sampling Component* (MDE 2015); other congener detection limit(s) were not reported in Table 1 of MDE (2015).

[c] Analytes identified by MDE in Table 1 of the *Total Maximum Daily Load (TMDL) Quality Assurance Project Plan (QAPP) PCB Sampling Component* (MDE 2015) as subject to chromatographic interferences.

1: Levels are approximate. The ability to quantify C_{free} for each analyte, as well as the overall analytical performance of the sampler, is subject to site- and sampler-specific sampling conditions.

2: Unlikely to be quantifiable with high certainty under static (unagitated conditions) for standard sampler deployment periods (e.g., 28 days).

Appendix B

Table B-1. Field notes on sampler status and condition observed during 30-, 60-, and 90-day visits.

Site ID	Deployed	Retrieved	Days Deployed	30-day Notes	60-day Notes	90-day Notes
BCB-73A	7/1/2024	9/30/2024	91		Label replaced	Mesh found partially apart from steel plate of sensor
BR-62A	7/2/2024	9/30/2024	90		Sensor bolts rusted, mesh was zip tied to steel plate. Label replaced	
ByR-202	7/1/2024	9/30/2024	91		Label replaced. Sensor bolts beginning to rust	Mesh found partially apart from steel plate of sensor
ByR-203	7/1/2024	9/30/2024	91	Label replaced	Sensor bolts rusted, mesh was zip tied to steel plate. Label replaced	
ByR-204A	7/2/2024	9/30/2024	90	Label replaced	Sensor bolts rusted, mesh was zip tied to steel plate	
ByR-205	7/2/2024	10/2/2024	92		Sensor found buried in sediment	
CC-66A	7/2/2024	10/1/2024	91	Label replaced	Sensor bolts rusted, mesh was zip tied to steel plate	
CR-197A	7/2/2024	10/1/2024	91		Mesh found separately from steel plate of sensor, mesh was zip tied to steel plate	Sensor found buried in sediment
DSB-85	8/2/2024	10/29/2024	88	Entire sensor was found missing, was replaced	Sensor found underneath cinderblock	Not retrieved – left to day 120
GR-195A	7/1/2024	10/1/2024	92	Sensor bolts beginning to rust	Sensor bolts rusted, mesh was zip tied to steel plate	Sensor found buried in sediment
HB-80	7/1/2024	10/2/2024	93		Cinderblock and sensor found buried in sediment. Sensor bolts rusted, mesh was zip tied to steel plate	

Site ID	Deployed	Retrieved	Days Deployed	30-day Notes	60-day Notes	90-day Notes
JR-201	7/1/2024	10/29/2024	120	Label replaced	Entire sampling apparatus found on stream bank; placed back into water and secured. Sensor bolts rusted, mesh was zip tied to steel plate	Not retrieved - left to day 120
OPC-234	7/1/2024	10/2/2024	93		Sensor bolts rusted, mesh was zip tied to steel plate	
OPC-81	7/1/2024	10/2/2024	93		Cinderblock and sensor found buried in sediment	Sensor found buried in sediment, migrated from original spot
PR-77	7/1/2024	10/29/2024	120	Label replaced	Entire sampling apparatus found on stream bank; placed back into water and secured.	Not retrieved – left to day 120
Ref01	7/2/2024	9/30/2024	90			
Ref02	7/1/2024	9/30/2024	91		Sensor bolts rusted, mesh was zip tied to steel plate. Label replaced	
UT-66A_2	7/2/2024	10/29/2024	119	Sensor found out of water		Not retrieved – left to day 120
WR-217	7/1/2024	9/30/2024	91		Label replaced	Mesh found partially apart from steel plate of sensor
WR-221A_2	7/2/2024	9/30/2024	90		Label replaced	Mesh found partially apart from steel plate of sensor
WR-229A_2	7/3/2024	9/30/2024	89	Label replaced	Sensor bolts beginning to rust	
WR-231A	7/1/2024	N/A	N/A	Label replaced	Label replaced. Sensor bolts beginning to rust	Sampling apparatus was lost entirely between 60 and 90 day check-ins
WR-232	7/1/2024	9/30/2024	91		Label replaced	
WR-233	7/1/2024	9/30/2024	91	Label replaced		

Appendix C

Table C-1. Sample results: concentration of freely-dissolved (C_{free}) Analytes, provided by SiREM laboratory

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	BCB-73A			BR-62A			ByR-202			ByR-203			ByR-204A			ByR-205		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-1	ND		10	ND		5.7	ND		8.4	ND		8.6	ND		8.2	17	J q	9
PCB-2	17	J q	7.3	9.2	J q	4.1	14	J q	5.9	ND		6.2	ND		5.5	12	J	6
PCB-3	8.9	J B q	5.9	ND		3.3	6.5	J B q	4.9	8	J B q	5	ND		4.3	6.8	J q B	4.6
PCB-4	ND		14	ND		5.8	36	J q	8.4	ND		12	ND		14	ND		10
PCB-5	ND		7.4	ND		3	ND		4.7	ND		6.6	ND		7.4	ND		5.1
PCB-6	ND		6.2	ND		2.6	ND		3.9	ND		5.8	ND		6.2	ND		4.7
PCB-7	ND		5.1	ND		2.1	ND		3.1	ND		4.5	ND		5.1	ND		3.7
PCB-8	ND		4.5	ND		1.8	16	J q	2.8	17	J q	4.2	ND		4.5	7.3	J	3.1
PCB-9	ND		7	ND		2.8	ND		4.3	ND		6.2	ND		7	ND		4.7
PCB-10	ND		11	ND		4.7	ND		7.1	ND		11	ND		11	ND		7.7
PCB-11	ND		4.8	7.2	J q	1.9	23	J q	2.9	ND		4.3	11	J q	4.6	ND		3.4
PCB-12/13	ND	C	3.5	ND	C	1.4	ND	C	2.2	ND	C	3.1	ND	C	3.5	ND	C	2.4
PCB-14																		
PCB-15	ND		2.2	ND		0.9	31		1.5	15	J	2.1	ND		2.1	5.5	J q	1.5
PCB-16	ND		0.7	ND		0.96	4.7	J	0.66	5.7	J q	0.96	ND		1.2	ND		0.52
PCB-17	ND		0.46	1.5	J	0.62	12	J	0.44	8.4	J	0.62	0.89	J q	0.8	2.3	J q	0.35
PCB-18/30	0.91	J C q	0.41	ND	C	0.55	11	J C	0.39	8.9	J C q	0.55	1.9	J q C	0.7	4.7	J q C	0.3
PCB-19	ND		0.93	ND		1.3	10	J	0.89	7.4	J q	1.3	ND		1.6	3.2	J	0.69
PCB-20/28	ND	C	0.47	0.46	J q C	0.32	35	C	0.57	18	J C	0.44	2.1	J q C	0.52	8.9	J C	0.38
PCB-21/33	ND	C	0.69	ND	C	0.47	2.3	J C q	0.82	1.1	J C q	0.63	ND	C	0.76	0.69	J q C	0.55
PCB-22	ND		0.59	ND		0.39	4.2	J	0.71	1.9	J q	0.54	ND		0.59	2.5	J	0.47
PCB-23	ND		0.87	ND		0.59	ND		1	ND		0.79	ND		0.95	ND		0.69
PCB-24	ND		0.47	ND		0.64	ND		0.44	ND		0.64	ND		0.82	ND		0.36
PCB-25	ND		0.55	ND		0.37	2.5	J	0.65	1.4	J	0.51	ND		0.58	0.5	J q	0.44
PCB-26/29	ND	C	0.69	ND	C	0.44	4.1	J C q	0.75	3.2	J C	0.61	ND	C	0.69	0.94	J C	0.52
PCB-27	ND		0.43	ND		0.59	6.3	J	0.41	5.9	J q	0.59	ND		0.75	1.4	J q	0.32
PCB-31	ND		0.5	0.55	J	0.35	19	J	0.61	11	J	0.48	1.5	J	0.55	5	J	0.41
PCB-32	0.85	J	0.31	0.81	J q	0.43	4.9	J q	0.29	6.9	J	0.43	ND		0.54	3	J	0.23
PCB-34	ND		0.87	ND		0.56	ND		0.95	ND		0.77	ND		0.87	ND		0.66
PCB-35	ND		0.48	ND		0.31	ND		0.53	ND		0.42	ND		0.48	ND		0.36
PCB-36																		
PCB-37	ND		0.3	ND		0.22	4.2	J	0.39	1.8	J q	0.3	ND		0.35	1.1	J	0.26
PCB-38	ND		0.54	ND		0.36	ND		0.64	ND		0.49	ND		0.54	0.54	J	0.42
PCB-39	ND		0.39	ND		0.27	ND		0.47	ND		0.37	ND		0.43	ND		0.32
PCB-40/41/71	ND	C	0.65	ND	C	0.25	3.3	J C	1.3	3.2	J C	0.77	ND	C	0.52	ND	C	0.89
PCB-42	ND		0.56	ND		0.22	1.6	J	1.1	0.96	J q	0.67	ND		0.46	ND		0.77
PCB-43/73	ND	C	0.61	ND	C	0.24	1.2	J C	1.2	ND	C	0.74	ND	C	0.5	ND	C	0.84
PCB-44/47/65	3.1	J C B	0.68	1.9	J C B	0.25	20	C B	1.3	9.2	J C B	0.78	3.6	J q C B	0.54	7.9	J q C B	0.91
PCB-45/51	ND	C	0.9	ND	C	0.35	2	J C	1.7	2.1	J C	1.1	ND	C	0.71	ND	C	1.2
PCB-46	ND		1.2	ND		0.48	ND		2.3	ND		1.4	ND		0.97	ND		1.6
PCB-48	ND		0.62	ND		0.25	1.7	J q	1.2	1.3	J	0.74	ND		0.5	ND		0.85
PCB-49/69	ND	C	0.44	ND	C	0.17	6.5	J C	0.89	3.7	J C	0.53	0.44	J q C	0.35	2	J C	0.62
PCB-50/53	ND	C	0.91	ND	C	0.34	3.2	J C	1.7	1.6	J C q	1.1	ND	C	0.71	ND	C	1.2
PCB-52	ND		0.93	ND		0.36	15		1.8	7.8	J	1.1	1.9	J q	0.75	5.6	J	1.2
PCB-54	ND		0.23	ND		0.19	ND		0.14	ND		0.19	ND		0.17	ND		0.12
PCB-55	ND		0.27	ND		0.1	ND		0.55	0.46	J q	0.32	ND		0.22	ND		0.37
PCB-56	ND		0.26	ND		0.093	1.4	J q	0.5	1	J	0.28	ND		0.2	0.39	J q	0.35
PCB-57	ND		0.42	ND		0.16	ND		0.83	ND		0.49	ND		0.34	ND		0.57
PCB-58	ND		0.34	ND		0.13	ND		0.68	ND		0.41	ND		0.28	ND		0.47
PCB-59/62/75	ND	C	0.4	ND	C	0.16	1.5	J C	0.81	0.83	J C	0.47	ND	C	0.31	ND	C	0.56
PCB-60	ND		0.25	0.1	J q	0.094	2.2	J	0.51	1.3	J	0.28	0.21	J	0.2	0.71	J q	0.35

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	BCB-73A			BR-62A			ByR-202			ByR-203			ByR-204A			ByR-205		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-61/70/74/76	ND	C	0.29	0.7	J C	0.11	20	C	0.57	10	J C	0.34	2.2	J C	0.22	5.2	J C	0.39
PCB-63	ND		0.3	ND		0.11	1.7	J	0.61	0.77	J q	0.34	ND		0.24	ND		0.41
PCB-64	ND		0.38	ND		0.15	4.4		0.77	2.3	J q	0.45	0.46	J	0.32	1.3	J q	0.53
PCB-66	ND		0.27	0.15	J q	0.1	12		0.54	4.8	q	0.32	0.86	J q	0.23	2.5	J	0.37
PCB-67	ND		0.27	ND		0.1	0.6	J q	0.52	0.34	J	0.3	ND		0.21	ND		0.37
PCB-68	0.26	J q	0.27	0.16	J q	0.1	0.27	J q	0.55	ND		0.31	0.048	J q	0.22	0.36	J q	0.38
PCB-72	ND		0.31	ND		0.11	ND		0.61	ND		0.35	ND		0.24	ND		0.42
PCB-77	ND		0.28	0.12	J q	0.1	0.99	J	0.54	0.93	J q	0.31	ND		0.21	ND		0.38
PCB-78																		
PCB-79	ND		0.2	ND		0.074	ND		0.39	ND		0.22	ND		0.16	ND		0.27
PCB-80	ND		0.25	ND		0.097	ND		0.52	ND		0.3	ND		0.21	ND		0.35
PCB-81	ND		0.22	ND		0.084	ND		0.45	ND		0.25	ND		0.17	ND		0.32
PCB-82	ND		0.21	ND		0.14	ND		0.19	ND		0.24	ND		0.22	ND		0.19
PCB-83/99	0.61	J C	0.2	0.64	J C	0.13	3.8	C	0.18	2.4	J C	0.22	1.2	J q C	0.2	2.5	J C	0.18
PCB-84	ND		0.35	ND		0.24	ND		0.3	ND		0.4	ND		0.36	ND		0.3
PCB-85/116/117	ND	C	0.18	ND	C	0.12	1.4	J C q	0.16	0.79	J C q	0.21	ND	C	0.18	1.1	J C	0.16
PCB-86/87/97/109/119/125	0.39	J C q	0.18	0.56	J C	0.12	2.9	J C q	0.15	1.6	J C	0.2	0.88	J q C	0.18	2.2	J C	0.15
PCB-88/91	ND	C	0.26	ND	C	0.18	1	J C	0.23	0.44	J C q	0.29	ND	C	0.27	ND	C	0.23
PCB-89	ND		0.28	ND		0.19	ND		0.25	ND		0.31	ND		0.29	ND		0.25
PCB-90/101/113	0.6	J C q	0.2	1.1	J C	0.13	4.2	J C q	0.18	3.3	J C	0.22	1.4	J q C	0.21	4.2	J C	0.18
PCB-92	ND		0.24	ND		0.16	1.7	J q	0.21	1.4	J	0.27	0.62	J q	0.25	1.7	J	0.22
PCB-93/100	ND	C	0.23	ND	C	0.16	ND	C	0.21	ND	C	0.27	ND	C	0.23	0.26	J C	0.2
PCB-94	ND		0.33	ND		0.23	ND		0.29	ND		0.38	ND		0.34	ND		0.28
PCB-95	ND		0.32	0.27	J q	0.22	2.7		0.28	1.5	J q	0.36	1.1	J	0.33	2.1	J	0.27
PCB-96	ND		0.3	ND		0.2	ND		0.25	ND		0.34	ND		0.3	ND		0.24
PCB-98/102	ND	C	0.25	ND	C	0.17	ND	C	0.22	ND	C	0.28	ND	C	0.26	ND	C	0.22
PCB-103	ND		0.28	ND		0.19	ND		0.25	ND		0.32	ND		0.28	ND		0.24
PCB-104																		
PCB-105	ND		0.088	0.28	J	0.061	0.93	J	0.12	0.6	J	0.074	0.4	J	0.078	0.73	J	0.078
PCB-106	0.79		0.12	0.58		0.09	0.52		0.15	0.9		0.1	0.85		0.11	1.5		0.11
PCB-107	ND		0.099	ND		0.072	ND		0.13	ND		0.081	ND		0.092	0.28	J	0.091
PCB-108/124	ND	C	0.1	ND	C	0.077	ND	C	0.14	ND	C	0.087	ND	C	0.097	0.17	J C	0.091
PCB-110/115	0.27	J C B q	0.14	0.83	J q C B	0.095	3.8	C B	0.13	2.6	J C B	0.16	1.2	J C B	0.14	2.7	J C B	0.13
PCB-111	ND		0.15	ND		0.098	ND		0.13	ND		0.17	ND		0.15	ND		0.14
PCB-112	ND		0.15	ND		0.095	ND		0.13	ND		0.16	ND		0.15	ND		0.13
PCB-114	ND		0.089	ND		0.071	ND		0.12	0.13	J q	0.084	ND		0.089	ND		0.085
PCB-118	0.28	J	0.089	0.85	J	0.065	2.3		0.11	1.7		0.074	0.93	J	0.083	2.3		0.077
PCB-120	ND		0.099	ND		0.066	ND		0.09	ND		0.11	ND		0.097	ND		0.091
PCB-121																		
PCB-122	ND		0.13	ND		0.1	ND		0.18	ND		0.12	ND		0.13	ND		0.12
PCB-123	ND		0.094	ND		0.071	ND		0.13	0.12	J q	0.079	ND		0.089	ND		0.085
PCB-126	ND		0.088	ND		0.064	ND		0.11	ND		0.076	ND		0.079	ND		0.082
PCB-127	ND		0.094	ND		0.07	ND		0.12	ND		0.078	ND		0.088	ND		0.083
PCB-128/166	ND	C	0.083	0.15	J C	0.064	0.21	J C q	0.09	0.16	J C q	0.1	0.13	J C	0.055	0.25	J C	0.079
PCB-129/138/160/163	0.78	J C B	0.097	1	J C B	0.074	1.4	J C B	0.11	1.5	J C B	0.12	0.88	J C B	0.065	2.4	J C B	0.088
PCB-130	ND		0.12	ND		0.093	ND		0.14	ND		0.15	ND		0.082	ND		0.12
PCB-131	ND		0.13	ND		0.095	ND		0.14	ND		0.15	ND		0.086	ND		0.12
PCB-132	0.33	J q	0.14	ND		0.1	0.58	J	0.15	0.3	J q	0.16	0.24	J q	0.09	0.69	J	0.12
PCB-133	ND		0.13	ND		0.095	ND		0.14	ND		0.15	ND		0.083	ND		0.11
PCB-134/143	ND	C	0.15	ND	C	0.11	ND	C	0.15	ND	C	0.17	ND	C	0.093	ND	C	0.13
PCB-135/151	0.21	J C	0.049	0.29	J q C	0.011	0.51	J C	0.051	0.75	J C	0.039	ND	C	0.036	0.73	J C	0.043
PCB-136	ND		0.035	ND		0.0078	0.2	J q	0.037	0.15	J q	0.028	ND		0.025	0.2	J q	0.03

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	BCB-73A			BR-62A			ByR-202			ByR-203			ByR-204A			ByR-205		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-137	ND		0.083	ND		0.067	ND		0.092	ND		0.11	ND		0.057	ND		0.081
PCB-139/140	ND	C	0.094	ND	C	0.074	ND	C	0.1	ND	C	0.12	ND	C	0.063	ND	C	0.088
PCB-141	ND		0.097	0.16	J q	0.076	0.13	J q	0.11	0.14	J q	0.12	0.16	J	0.064	0.34	J	0.09
PCB-142																		
PCB-144	ND		0.039	ND		0.0092	ND		0.041	ND		0.033	ND		0.029	ND		0.035
PCB-145	ND		0.039	ND		0.0087	ND		0.041	ND		0.031	ND		0.028	ND		0.033
PCB-146	ND		0.091	ND		0.069	0.12	J q	0.1	0.15	J q	0.11	0.063	J q	0.06	ND		0.085
PCB-147/149	0.3	J C q	0.11	0.53	J C	0.085	0.74	J C	0.12	0.91	J C	0.13	0.47	J q C	0.076	1.3	J C	0.1
PCB-148	ND		0.04	ND		0.009	ND		0.043	ND		0.032	ND		0.028	ND		0.035
PCB-150	ND	J q	0.033	0.03	J q	0.0074	ND		0.034	0.12	J	0.027	ND	J q	0.024	0.056	J q	0.028
PCB-152	0.043	J	0.043	0.045	J q	0.0097	ND		0.044	0.1	J q	0.034	ND	J q	0.031	0.22	J q	0.036
PCB-153/168	0.57	J C	0.071	0.94	J C	0.055	1	J C	0.076	1.2	J C	0.086	0.64	J q C	0.047	1.7	C	0.065
PCB-154	ND	J q	0.032	0.039	J q	0.0074	0.12	J	0.034	0.14	J	0.027	ND	J q	0.023	0.15	J	0.029
PCB-155																		
PCB-156/157	ND	C	0.078	0.077	J q C	0.062	0.16	J C	0.085	0.14	J C q	0.096	0.1	J q C	0.051	0.2	J q C	0.074
PCB-158	ND		0.06	0.097	J	0.044	ND		0.064	0.089	J q	0.072	0.058	J q	0.039	0.14	J q	0.055
PCB-159	0.042	J q	0.06	0.3	J	0.048	0.18	J	0.066	0.15	J	0.075	0.23	J	0.039	0.24	J	0.056
PCB-161	1.2		0.078	1.8		0.059	0.82		0.087	1.5		0.093	1.7		0.054	1.3		0.073
PCB-162	ND		0.069	ND		0.051	ND		0.073	ND		0.081	ND		0.045	ND		0.063
PCB-164	ND		0.092	ND		0.071	0.11	J q	0.1	ND		0.11	0.14	J	0.062	0.11	J q	0.083
PCB-165	0.081	J	0.1	0.16	J	0.074	ND	J q	0.11	0.17	J q	0.12	0.37		0.065	0.12	J	0.091
PCB-167	ND		0.058	ND		0.043	ND		0.064	ND		0.07	ND		0.037	0.1	J q	0.054
PCB-169	ND		0.043	ND		0.033	ND		0.046	ND		0.058	ND		0.03	ND		0.044
PCB-170	ND		0.011	ND		0.019	ND		0.02	ND		0.05	ND		0.02	ND		0.026
PCB-171/173	ND	C	0.012	ND	C	0.02	ND	C	0.022	ND	C	0.054	ND	C	0.022	ND	C	0.028
PCB-172	ND		0.013	ND		0.023	ND		0.025	ND		0.061	ND		0.024	ND		0.031
PCB-174	ND		0.013	ND		0.022	ND		0.024	0.27	J q	0.056	ND		0.021	0.2	J q	0.028
PCB-175	ND		0.012	ND		0.021	ND		0.023	ND		0.055	ND		0.022	ND		0.029
PCB-176	ND		0.01	ND		0.017	ND		0.019	ND		0.046	ND		0.018	ND		0.023
PCB-177	ND		0.012	ND		0.02	ND		0.022	ND		0.053	ND		0.02	0.23	J	0.026
PCB-178	ND		0.015	ND		0.025	ND		0.028	ND		0.063	ND		0.025	ND		0.032
PCB-179	ND		0.0099	ND		0.016	0.078	J q	0.019	0.18	J	0.042	0.046	J q	0.017	0.099	J q	0.022
PCB-180/193	0.039	C q	0.0087	ND	C	0.015	0.25	C	0.016	1.1	C	0.041	ND	C	0.015	0.99	C	0.02
PCB-181	ND		0.011	ND		0.019	ND		0.02	ND		0.051	ND		0.02	ND		0.026
PCB-182	ND		0.011	ND		0.019	ND		0.02	ND		0.051	ND		0.02	ND		0.026
PCB-183/185	ND	C	0.012	0.2	J q C	0.02	ND	C	0.022	ND	C	0.052	ND	C	0.02	ND	C	0.026
PCB-184																		
PCB-186	ND		0.0093	ND		0.015	ND		0.017	ND		0.039	ND		0.016	ND		0.02
PCB-187	0.22	J	0.0094	0.25	J q	0.016	0.31	J	0.018	0.29	J q	0.043	0.18	J	0.016	0.41	J	0.022
PCB-188	0.21	J	0.0085	0.3	J	0.015	0.5		0.016	0.81		0.039	0.094	J	0.015	0.24	J q	0.02
PCB-189	ND		0.016	ND		0.026	ND		0.032	ND		0.029	ND		0.019	ND		0.033
PCB-190	ND		0.0076	ND		0.013	ND		0.014	ND		0.035	ND		0.014	ND		0.018
PCB-191	ND		0.0079	ND		0.014	ND		0.015	ND		0.037	ND		0.014	ND		0.018
PCB-192																		
PCB-194	0.034	J	0.011	0.041	J	0.0075	0.031	J q	0.0083	0.032	J q	0.01	0.0097	J q	0.0077	0.069	J	0.012
PCB-195	0.026	J q	0.013	0.025	J	0.0088	0.026	J	0.0098	0.034	J q	0.012	0.02	J q	0.0091	0.037	J q	0.014
PCB-196	ND		0.025	ND		0.017	ND		0.024	ND		0.041	ND		0.029	ND		0.034
PCB-197	0.22		0.018	0.14	q	0.011	0.14		0.016	0.42		0.027	0.31		0.02	0.21		0.023
PCB-198/199	0.13	J C	0.026	ND	C	0.017	ND	C	0.024	ND	C	0.04	ND	C	0.031	0.12	J q C	0.034
PCB-200	0.2	J	0.022	ND		0.014	0.17	J q	0.021	0.36	J q	0.034	ND		0.025	0.18	J q	0.029
PCB-201	ND		0.022	ND		0.014	ND		0.021	ND		0.034	ND		0.027	ND		0.029
PCB-202	ND		0.024	0.024	J q	0.015	ND		0.022	ND		0.036	ND		0.029	ND		0.03

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	BCB-73A			BR-62A			ByR-202			ByR-203			ByR-204A			ByR-205		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-203	ND		0.021	ND		0.014	ND		0.02	ND		0.034	ND		0.026	ND		0.028
PCB-204																		
PCB-205	0.01	J q	0.0096	0.0064	J q	0.0066	ND	J q	0.0074	0.021	J q	0.0091	0.041	J	0.0069	0.015	J q	0.01
PCB-206	ND		0.03	ND		0.053	ND		0.05	ND		0.056	ND		0.045	ND		0.023
PCB-207	0.051		0.022	0.024		0.042	ND		0.039	0.089		0.045	ND		0.035	0.13		0.019
PCB-208	ND		0.024	ND		0.047	ND		0.044	ND		0.049	ND		0.039	ND		0.02
PCB-209	0.026	q	0.0042	0.13		0.0027	0.068		0.0015	0.11		0.0047	0.026	q	0.0027	0.076		0.0044
Total PCBs	**39**			**35**			**379**			**203**			**42**			**144**		

Notes:

B: Compound found in the blank and sample.
C: The compound co-eluted with other compounds.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L: Percent to steady state less than 10%.
MDL: method detection limit
ND: Non-detect
PCB: polychlorinated biphenyl
pg/L: picograms per liter
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ration. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	CC-66A			CR-197A			GR-195A			HB-80			OPC-234			OPC-81		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-1	9.8	J q	8	13	J	6.1	ND		8.4	ND		8.2	ND		11	19	J q	8.2
PCB-2	ND		5.3	11	J	4.2	15	J	6	ND		5.7	ND		7.5	22	J q	5.5
PCB-3	ND		4.1	ND		3.3	ND		4.9	ND		4.5	12	J q B	6	ND		4.5
PCB-4	ND		10	ND		4.5	ND		12	ND		7.7	ND		9	ND		14
PCB-5	ND		5.4	ND		2.1	ND		6.2	ND		4.3	ND		5.1	ND		7.8
PCB-6	ND		4.7	ND		1.9	ND		5.4	ND		3.7	ND		4.3	ND		6.6
PCB-7	ND		3.7	ND		1.5	ND		4.5	ND		2.8	ND		3.4	ND		5.4
PCB-8	ND		3.4	ND		1.3	ND		3.9	ND		2.6	ND		3.1	ND		4.8
PCB-9	ND		5.1	ND		2	ND		5.8	ND		3.9	ND		4.7	ND		7.4
PCB-10	ND		8.2	ND		3.3	ND		10	ND		6.5	ND		7.7	ND		12
PCB-11	26	J q	3.4	7.4	J q	1.4	ND		4.1	ND		2.6	ND		3.1	11	J q	4.8
PCB-12/13	ND	C	2.5	ND	C	1	ND	C	2.9	ND	C	2	ND	C	2.4	ND	C	3.6
PCB-14																		
PCB-15	ND		1.6	1.4	J q	0.62	ND		2	ND		1.4	ND		1.5	ND		2.3
PCB-16	1.6	J q	0.78	ND		0.58	ND		0.92	1.1	J q	0.6	ND		0.8	ND		0.74
PCB-17	0.74	J q	0.51	ND		0.37	2.9	J q	0.61	1.2	J q	0.39	ND		0.53	ND		0.49
PCB-18/30	5	J C	0.44	1.4	J q C	0.33	3.7	J q C	0.53	1.8	J C q	0.34	1.3	J q C	0.45	1.3	J q C	0.43
PCB-19	ND		1	1.3	J	0.76	ND		1.2	ND		0.8	1.7	J q	1.1	ND		0.99
PCB-20/28	0.85	J q C	0.46	1.3	J q C	0.37	4.5	J q C	0.62	1.9	J C q	0.62	1.6	J C	0.44	3	J C	0.56
PCB-21/33	ND	C	0.7	ND	C	0.54	1.1	J q C	0.89	ND	C	0.89	ND	C	0.63	1.3	J C	0.82
PCB-22	ND		0.57	ND		0.45	1.1	J q	0.72	ND		0.71	ND		0.54	ND		0.71
PCB-23	ND		0.87	ND		0.68	ND		1.1	ND		1.1	ND		0.79	ND		1
PCB-24	ND		0.53	ND		0.38	ND		0.62	ND		0.41	ND		0.53	ND		0.5
PCB-25	ND		0.53	ND		0.43	ND		0.72	ND		0.71	ND		0.51	ND		0.65
PCB-26/29	ND	C	0.63	ND	C	0.51	0.95	J C	0.82	ND	C	0.82	ND	C	0.61	ND	C	0.81
PCB-27	ND		0.48	ND		0.36	ND		0.57	ND		0.37	ND		0.49	ND		0.46
PCB-31	1.2	J	0.5	1.1	J	0.4	3.9	J	0.66	0.97	J q	0.66	1.6	J	0.48	2	J	0.6
PCB-32	ND		0.35	0.83	J q	0.26	0.89	J q	0.41	1.1	J q	0.27	0.86	J q	0.36	0.65	J q	0.33
PCB-34	ND		0.8	ND		0.65	ND		1	ND		1	ND		0.77	ND		1
PCB-35	ND		0.44	ND		0.36	ND		0.58	ND		0.58	ND		0.42	ND		0.57
PCB-36																		
PCB-37	ND		0.32	ND		0.26	0.66	J	0.43	ND		0.43	ND		0.3	ND		0.42
PCB-38	ND		0.54	ND		0.42	ND		0.7	ND		0.7	ND		0.49	ND		0.64
PCB-39	ND		0.39	ND		0.31	ND		0.52	ND		0.52	ND		0.37	ND		0.47
PCB-40/41/71	ND	C	0.75	ND	C	0.75	ND	C	1.2	ND	C	1.1	ND	C	0.4	ND	C	0.74
PCB-42	ND		0.67	ND		0.65	ND		1	ND		1	ND		0.35	ND		0.65
PCB-43/73	ND	C	0.71	ND	C	0.68	ND	C	1.1	ND	C	1	ND	C	0.39	ND	C	0.7
PCB-44/47/65	7.1	J C B	0.75	10	J C B	0.75	10	J C B	1.2	14	C B	1.1	1.9	J q C B	0.42	6.4	J C B	0.74
PCB-45/51	ND	C	1	ND	C	1	ND	C	1.6	ND	C	1.5	ND	C	0.54	ND	C	1
PCB-46	ND		1.4	ND		1.4	ND		2.1	ND		2	ND		0.74	ND		1.3
PCB-48	ND		0.73	ND		0.71	ND		1.1	ND		1.1	ND		0.38	ND		0.69
PCB-49/69	ND	C	0.52	ND	C	0.52	1.3	J q C	0.82	ND	C	0.79	0.82	J q C	0.29	0.77	J q C	0.51
PCB-50/53	ND	C	1	ND	C	0.99	ND	C	1.6	ND	C	1.5	ND	C	0.57	ND	C	1
PCB-52	ND		1.1	1.7	J	1	2.9	J	1.6	ND		1.5	3	J	0.59	2.3	J	1
PCB-54	ND		0.17	ND		0.1	ND		0.13	ND		0.19	ND		0.14	ND		0.18
PCB-55	ND		0.32	ND		0.32	ND		0.51	ND		0.52	ND		0.17	ND		0.31
PCB-56	ND		0.3	ND		0.29	ND		0.47	ND		0.5	ND		0.15	ND		0.29
PCB-57	ND		0.5	ND		0.48	ND		0.78	ND		0.76	ND		0.26	ND		0.49
PCB-58	ND		0.4	ND		0.4	ND		0.63	ND		0.63	ND		0.22	ND		0.39
PCB-59/62/75	ND	C	0.48	ND	C	0.46	ND	C	0.75	ND	C	0.73	ND	C	0.25	ND	C	0.47
PCB-60	ND		0.31	ND		0.31	ND		0.5	ND		0.5	ND		0.15	ND		0.3

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	CC-66A			CR-197A			GR-195A			HB-80			OPC-234			OPC-81		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-61/70/74/76	0.76	J C	0.34	0.99	J q C	0.34	1.6	J q C	0.55	0.98	J C	0.55	1.5	J q C	0.17	2.3	J q C	0.33
PCB-63	ND		0.36	ND		0.35	ND		0.59	ND		0.57	ND		0.19	ND		0.35
PCB-64	ND		0.46	ND		0.44	ND		0.72	ND		0.7	ND		0.24	0.77	J q	0.45
PCB-66	ND		0.32	0.72	J	0.33	0.84	J	0.53	0.56	J q	0.53	0.63	J q	0.16	1.1	J q	0.31
PCB-67	ND		0.31	ND		0.32	ND		0.5	ND		0.5	ND		0.16	ND		0.31
PCB-68	0.051	J q	0.33	0.46	J	0.32	0.41	J q	0.52	0.7	J	0.52	ND		0.17	0.38	J q	0.31
PCB-72	ND		0.37	ND		0.36	ND		0.58	ND		0.58	ND		0.18	ND		0.35
PCB-77	ND		0.34	ND		0.33	ND		0.54	ND		0.54	ND		0.16	ND		0.33
PCB-78																		
PCB-79	ND		0.24	ND		0.25	ND		0.39	ND		0.39	ND		0.12	ND		0.23
PCB-80	ND		0.3	ND		0.31	ND		0.49	ND		0.5	ND		0.16	ND		0.29
PCB-81	ND		0.28	0.32	J q	0.28	ND		0.44	ND		0.47	ND		0.14	0.44	J	0.26
PCB-82	ND		0.19	ND		0.18	ND		0.22	ND		0.39	ND		0.18	ND		0.29
PCB-83/99	ND	C	0.18	1.2	J q C	0.17	ND	C	0.2	ND	C	0.37	0.98	J C	0.16	1.9	J C	0.27
PCB-84	ND		0.31	ND		0.28	ND		0.34	ND		0.56	ND		0.29	ND		0.46
PCB-85/116/117	ND	C	0.17	ND	C	0.16	ND	C	0.19	ND	C	0.32	0.28	J q C	0.15	1	J C	0.25
PCB-86/87/97/109/119/125	0.87	J C	0.17	ND	C	0.15	ND	C	0.18	ND	C	0.31	0.96	J C	0.14	ND	C	0.24
PCB-88/91	ND	C	0.23	ND	C	0.22	ND	C	0.26	ND	C	0.45	ND	C	0.22	ND	C	0.35
PCB-89	ND		0.25	ND		0.23	ND		0.28	ND		0.47	ND		0.23	ND		0.38
PCB-90/101/113	1.5	J C	0.18	2.5	J C	0.17	1.7	J C	0.2	2.3	J C q	0.35	1.9	J C	0.17	2.7	J C	0.27
PCB-92	1.5	J	0.22	ND		0.2	ND		0.25	ND		0.42	ND		0.2	1.5	J q	0.32
PCB-93/100	ND	J q C	0.21	ND	C	0.2	ND	C	0.23	0.094	J C	0.4	ND	C	0.19	ND	J q C	0.32
PCB-94	ND		0.3	ND		0.27	ND		0.33	ND		0.54	ND		0.28	ND		0.44
PCB-95	0.53	J q	0.28	2.1	J	0.26	ND		0.31	ND		0.51	1.2	J q	0.27	1.5	J	0.42
PCB-96	ND		0.26	ND		0.23	0.92	J	0.29	ND		0.44	ND		0.25	ND		0.38
PCB-98/102	ND	C	0.23	ND	C	0.21	ND	C	0.26	ND	C	0.43	ND	C	0.21	ND	C	0.34
PCB-103	ND		0.24	ND		0.23	ND		0.27	ND		0.46	ND		0.23	ND		0.37
PCB-104																		
PCB-105	0.17	J	0.099	0.26	J	0.072	0.26	J	0.12	ND		0.17	0.21	J q	0.087	0.42	J q	0.12
PCB-106	0.33		0.14	1.3		0.096	0.24		0.16	0.022		0.2	ND		0.13	0.68		0.17
PCB-107	ND		0.11	ND		0.075	ND		0.14	ND		0.17	ND		0.1	ND		0.14
PCB-108/124	ND	C	0.12	ND	C	0.082	ND	C	0.14	ND	C	0.18	ND	C	0.11	ND	C	0.15
PCB-110/115	1.1	J C B	0.13	2.1	J C B	0.12	0.85	J q C B	0.14	1.3	J C B	0.26	1.3	J q C B	0.12	2.1	J C B	0.19
PCB-111	ND		0.14	ND		0.12	ND		0.16	ND		0.26	ND		0.12	ND		0.2
PCB-112	ND		0.13	ND		0.12	ND		0.14	ND		0.25	ND		0.12	ND		0.2
PCB-114	ND		0.11	ND		0.08	ND		0.13	ND		0.18	ND		0.098	ND		0.13
PCB-118	0.64	J	0.1	0.83	J	0.069	0.3	J q	0.12	0.52	J q	0.16	0.85	J	0.089	1.3	J	0.13
PCB-120	ND		0.092	ND		0.09	ND		0.11	ND		0.19	ND		0.079	ND		0.14
PCB-121																		
PCB-122	ND		0.16	ND		0.1	ND		0.18	ND		0.23	ND		0.14	ND		0.19
PCB-123	ND		0.12	ND		0.08	ND		0.13	ND		0.18	ND		0.094	ND		0.14
PCB-126	ND		0.1	ND		0.073	ND		0.13	ND		0.17	ND		0.09	ND		0.13
PCB-127	ND		0.11	ND		0.076	ND		0.13	ND		0.17	ND		0.099	ND		0.14
PCB-128/166	0.14	J q C	0.11	0.45	J C	0.086	ND	C	0.089	ND	C	0.18	0.13	J q C	0.047	0.27	J C	0.13
PCB-129/138/160/163	0.76	J q C B	0.12	3	J C B	0.098	1	J C B	0.1	1.3	J C B	0.2	1.4	J q C B	0.057	2.4	J C B	0.15
PCB-130	ND		0.16	0.27	J B	0.13	ND		0.13	ND		0.25	0.1	J B	0.073	ND		0.19
PCB-131	ND		0.16	ND		0.13	ND		0.13	ND		0.24	ND		0.075	ND		0.19
PCB-132	ND		0.17	1.3	q	0.13	ND		0.14	ND		0.26	0.25	J q	0.082	0.74	J	0.2
PCB-133	ND		0.15	ND		0.13	ND		0.13	ND		0.24	ND		0.075	ND		0.19
PCB-134/143	ND	C	0.17	0.26	J C	0.14	ND	C	0.15	ND	C	0.26	ND	C	0.086	ND	C	0.21
PCB-135/151	ND	C	0.075	1.9	J C	0.055	0.37	J q C	0.047	0.61	J C q	0.15	0.44	J q C	0.047	0.93	J C	0.11
PCB-136	0.27	J	0.053	0.5	J	0.039	0.28	J q	0.033	0.56	J q	0.11	0.21	J q	0.033	0.3	J q	0.082

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	CC-66A			CR-197A			GR-195A			HB-80			OPC-234			OPC-81		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-137	ND		0.11	ND		0.097	ND		0.095	ND		0.2	ND		0.049	ND		0.14
PCB-139/140	ND	C	0.12	ND	C	0.1	ND	C	0.1	ND	C	0.2	ND	C	0.056	ND	C	0.15
PCB-141	ND		0.13	0.36	J q	0.1	ND		0.11	ND		0.2	0.18	J q	0.058	0.34	J	0.15
PCB-142																		
PCB-144	ND		0.063	ND		0.046	ND		0.039	ND		0.13	ND		0.038	ND		0.092
PCB-145	0.23	J	0.061	ND		0.042	ND		0.036	ND		0.11	ND		0.037	ND		0.086
PCB-146	ND		0.12	ND		0.096	ND		0.1	ND		0.19	0.22	J	0.054	0.26	J q	0.14
PCB-147/149	0.53	J C	0.14	2.7	C	0.11	0.56	J C	0.12	0.81	J C	0.21	0.88	J C	0.066	1.5	J C	0.17
PCB-148	ND		0.06	ND		0.046	ND		0.038	ND		0.13	ND		0.035	ND		0.092
PCB-150	0.21	J	0.05	0.12	J q	0.037	0.21	J q	0.031	ND		0.11	ND		0.03	ND		0.077
PCB-152	0.52	J	0.061	ND		0.045	0.45	J q	0.039	1.7		0.12	ND		0.041	ND		0.095
PCB-153/168	0.74	J C	0.093	2.2	C	0.074	0.89	J C	0.077	1.2	J C	0.15	1.1	C	0.04	2	C	0.11
PCB-154	0.093	J	0.054	0.13	J	0.039	0.14	J q	0.031	0.16	J	0.11	0.035	J	0.031	0.084	J q	0.078
PCB-155																		
PCB-156/157	ND	C	0.1	0.16	J q C	0.086	ND	C	0.083	ND	C	0.17	0.14	J q C	0.045	0.26	J C	0.12
PCB-158	0.11	J q	0.078	0.3	J	0.065	ND		0.065	ND		0.13	0.12	J	0.035	0.17	J q	0.095
PCB-159	0.19	J q	0.08	0.31		0.065	0.4	J	0.066	ND	J	0.13	0.15	J	0.036	0.17	J	0.094
PCB-161	1.2		0.1	1.7		0.081	0.086		0.082	ND		0.16	1.2		0.046	0.83		0.12
PCB-162	ND		0.088	ND		0.069	ND		0.074	ND		0.14	ND		0.039	ND		0.11
PCB-164	ND		0.12	0.27	J q	0.092	ND		0.098	ND		0.18	0.084	J	0.054	ND		0.14
PCB-165	0.34		0.12	0.15	q	0.1	0.42	J	0.1	0.064	J	0.18	0.098	J q	0.06	ND	J q	0.15
PCB-167	ND		0.076	0.15	J	0.059	ND		0.063	ND		0.13	0.088	J	0.031	ND		0.092
PCB-169	ND		0.06	ND		0.05	ND		0.048	ND		0.11	ND		0.025	ND		0.073
PCB-170	ND		0.046	0.69	q	0.047	ND		0.052	ND		0.033	ND		0.0078	ND		0.029
PCB-171/173	ND	C	0.05	ND	C	0.047	ND	C	0.056	ND	C	0.035	ND	C	0.0086	ND	C	0.031
PCB-172	ND		0.056	ND		0.055	ND		0.063	ND		0.039	ND		0.0097	ND		0.034
PCB-174	0.17	J q	0.051	0.83	q	0.05	0.28	J q	0.061	ND		0.036	0.26	J	0.0093	0.39	J	0.031
PCB-175	ND		0.051	ND		0.048	ND		0.058	ND		0.034	ND		0.0087	ND		0.032
PCB-176	ND		0.042	ND		0.04	ND		0.049	ND		0.028	ND		0.0074	ND		0.025
PCB-177	ND		0.048	0.52	J q	0.048	ND		0.055	ND		0.034	0.23	J	0.0085	0.24	J q	0.029
PCB-178	ND		0.059	0.41	J	0.056	ND		0.067	ND		0.039	ND		0.011	0.2	J q	0.035
PCB-179	0.074	J q	0.039	0.29	J q	0.037	ND		0.047	0.072	J q	0.026	0.13	J q	0.0073	0.2	J	0.024
PCB-180/193	0.57	C	0.038	2	q C	0.035	0.48	J C	0.041	ND	C	0.027	1.1	C	0.0062	0.57	q C	0.022
PCB-181	ND		0.047	ND		0.045	ND		0.052	ND		0.033	ND		0.0078	ND		0.029
PCB-182	0.19	J	0.047	0.22	J q	0.045	ND		0.052	ND		0.034	ND		0.0079	ND		0.029
PCB-183/185	ND	C	0.047	0.61	J q C	0.047	ND	C	0.053	ND	C	0.033	0.21	J q C	0.0083	0.31	J q C	0.029
PCB-184																		
PCB-186	ND		0.037	ND		0.035	ND		0.042	ND		0.025	ND		0.0068	ND		0.023
PCB-187	0.27	J	0.038	1.3		0.038	0.3	J q	0.044	ND		0.028	0.35		0.0066	0.63		0.024
PCB-188	0.37	J	0.034	0.18	J	0.034	0.75	J	0.04	0.29	J q	0.024	0.065	J	0.0062	0.11	J q	0.021
PCB-189	0.065	J q	0.03	ND		0.041	0.094	J q	0.014	ND		0.075	ND		0.024	ND		0.045
PCB-190	ND		0.033	ND		0.032	ND		0.038	ND		0.023	ND		0.0054	ND		0.02
PCB-191	ND		0.033	ND		0.032	ND		0.038	ND		0.024	ND		0.0056	ND		0.02
PCB-192																		
PCB-194	ND		0.011	0.13	J q	0.017	0.064	J	0.019	0.059	J q L	0.038	0.049	J q	0.0057	0.11	J	0.016
PCB-195	ND		0.013	0.094	J	0.02	ND		0.022	ND	L	0.047	0.029	J q	0.0068	0.042	J q	0.018
PCB-196	ND		0.041	0.15	J q	0.032	ND		0.044	ND	L	0.089	ND		0.025	ND		0.042
PCB-197	0.57		0.029	0.82		0.021	0.37		0.03	0.99	L	0.059	0.57		0.017	0.39		0.029
PCB-198/199	ND	C	0.041	0.33	J q C	0.03	ND	C	0.045	ND	C	0.086	ND	C	0.026	0.16	J C	0.04
PCB-200	ND		0.034	ND		0.026	ND		0.037	ND	L	0.072	ND		0.022	0.41	J	0.035
PCB-201	ND		0.036	0.029	J q	0.027	ND		0.039	ND	L	0.076	ND		0.022	ND		0.035
PCB-202	ND		0.038	0.12	J	0.028	ND		0.042	ND		0.077	ND		0.024	ND		0.038

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	CC-66A			CR-197A			GR-195A			HB-80			OPC-234			OPC-81		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-203	ND		0.035	0.21	J q	0.027	ND		0.038	ND	L	0.076	ND		0.021	ND		0.034
PCB-204																		
PCB-205	0.028	J	0.01	0.024	J q	0.015	0.021	J q	0.017	0.13	J L	0.034	0.0053	J q	0.0051	0.038	J	0.014
PCB-206	ND		0.019	ND		0.052	ND		0.1	ND	L	0.27	ND		0.039	ND		0.071
PCB-207	ND		0.015	0.036		0.042	ND		0.079	ND	L	0.21	0.08		0.03	0.18		0.056
PCB-208	ND		0.016	ND		0.046	ND		0.087	ND	L	0.22	ND		0.034	ND		0.061
PCB-209	0.1	L	0.0019	0.074	L	0.0017	0.2		0.0055	ND	L	0.0089	0.053		0.0027	0.28		0.0073
Total PCBs	**67**			**89**			**63**			**36**			**45**			**102**		

Notes:

B: Compound found in the blank and sample.
C: The compound co-eluted with other compounds.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L: Percent to steady state less than 10%.
MDL: method detection limit
ND: Non-detect
PCB: polychlorinated biphenyl
pg/L: picograms per liter
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ration. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	REF01			REF02			WR-217			WR-221A_2			WR-229A			WR-232		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-1	ND		9.4	ND		9.8	ND		9	10	J q	6.1	ND		8.8	ND		11
PCB-2	20	J q	6.3	12	J q	7	ND		6.4	6.5	J q	4.3	9.4	J q	5.9	20	J q	8
PCB-3	ND		4.6	ND		5.8	ND		5.3	ND		3.4	11	J q B	4.5	ND		6.2
PCB-4	ND		4.6	ND		22	ND		12	ND		8.4	ND		9	ND		12
PCB-5	ND		2.3	ND		12	ND		6.6	ND		4.3	ND		4.7	ND		7
PCB-6	5.1	J q	2	ND		11	ND		5.4	ND		3.8	ND		3.9	ND		5.8
PCB-7	ND		1.6	ND		8.2	ND		4.5	ND		3.1	ND		3.1	ND		4.8
PCB-8	6.5	J q	1.4	ND		7.3	ND		3.9	7.9	J q	2.7	7	J q	2.7	ND		4.2
PCB-9	ND		2.1	ND		11	ND		6.2	ND		4.3	ND		4.3	ND		6.2
PCB-10	ND		3.5	ND		18	ND		10	ND		6.5	ND		7.1	ND		11
PCB-11	9.8	J q	1.4	13	J q	7.7	12	J	4.1	8.6	J q	2.9	14	J	2.9	ND		4.3
PCB-12/13	ND	C	1.1	ND	C	5.6	ND	C	3.1	ND	C	2	ND	C	2.2	ND	C	3.3
PCB-14																		
PCB-15	2.6	J q	0.65	ND		3.7	ND		2	3.3	J q	1.2	ND		1.2	ND		2.1
PCB-16	ND		1.5	2.6	J q	1.4	1.8	J q	0.63	3.2	J q	0.68	2.2	J q	1.1	ND		1
PCB-17	ND		0.98	ND		0.89	1.7	J q	0.41	2.5	J	0.45	5.2	J	0.71	1.2	J q	0.66
PCB-18/30	4.2	J q C	0.87	4.3	J C	0.79	4	J C	0.37	6	J C	0.39	5	J C	0.62	2.7	J q C	0.58
PCB-19	ND		2	ND		1.8	ND		0.84	3	J	0.91	ND		1.5	ND		1.3
PCB-20/28	1.8	J q C	0.52	1.4	J C	0.61	2	J C	0.62	1.4	J C	0.41	1.6	J C	0.41	1.1	J q C	0.61
PCB-21/33	1.1	J C	0.76	ND	C	0.88	ND	C	0.89	0.7	J q C	0.6	ND	C	0.6	ND	C	0.88
PCB-22	ND		0.59	ND		0.77	0.89	J q	0.77	0.57	J q	0.5	0.83	J q	0.51	ND		0.71
PCB-23	ND		0.88	ND		1.1	ND		1.1	ND		0.75	ND		0.75	ND		1.1
PCB-24	ND		1	ND		0.92	ND		0.42	ND		0.46	ND		0.73	ND		0.68
PCB-25	ND		0.58	ND		0.71	ND		0.71	ND		0.47	ND		0.47	ND		0.71
PCB-26/29	ND	C	0.69	ND	C	0.87	ND	C	0.88	ND	C	0.56	ND	C	0.57	ND	C	0.81
PCB-27	ND		0.92	ND		0.84	ND		0.38	0.95	J	0.42	ND		0.66	ND		0.62
PCB-31	1.1	J q	0.56	1.1	J	0.65	1.8	J q	0.66	1.5	J	0.44	1.9	J	0.45	1	J	0.65
PCB-32	2.7	J q	0.67	0.88	J	0.61	1.9	J q	0.28	1.1	J q	0.3	1.7	J q	0.48	0.89	J q	0.45
PCB-34	ND		0.88	ND		1.1	ND		1	ND		0.72	ND		0.72	ND		1
PCB-35	0.84	J	0.49	ND		0.62	ND		0.58	ND		0.4	ND		0.4	ND		0.57
PCB-36																		
PCB-37	ND		0.36	ND		0.45	ND		0.43	ND		0.29	ND		0.29	ND		0.41
PCB-38	ND		0.55	ND		0.69	ND		0.7	ND		0.46	ND		0.46	ND		0.69
PCB-39	ND		0.44	ND		0.51	3	J q	0.52	ND		0.35	ND		0.35	ND		0.51
PCB-40/41/71	ND	C	1	ND	C	1	ND	C	1.1	ND	C	0.68	ND	C	1.2	ND	C	0.62
PCB-42	ND		0.92	ND		0.91	ND		0.99	ND		0.61	ND		1.1	ND		0.53
PCB-43/73	ND	C	0.98	ND	C	0.96	ND	C	1	ND	C	0.66	ND	C	1.1	ND	C	0.58
PCB-44/47/65	9.2	J C B	1.1	7.8	J C B	1	10	C B	1.1	9.9	J C B	0.7	14	C B	1.2	2.6	J C B	0.62
PCB-45/51	ND	C	1.4	ND	C	1.4	ND	C	1.5	ND	C	0.92	ND	C	1.6	ND	C	0.84
PCB-46	ND		1.9	ND		1.9	ND		2	ND		1.3	ND		2.2	ND		1.2
PCB-48	ND		0.99	ND		0.98	ND		1.1	ND		0.67	ND		1.2	ND		0.59
PCB-49/69	ND	C	0.73	ND	C	0.71	ND	C	0.78	ND	C	0.48	ND	C	0.86	ND	C	0.41
PCB-50/53	ND	C	1.4	ND	C	1.4	ND	C	1.5	ND	C	0.93	ND	C	1.7	ND	C	0.84
PCB-52	ND		1.4	ND		1.5	ND		1.6	ND		0.95	ND		1.7	ND		0.89
PCB-54	ND		0.22	ND		0.11	0.34	J q	0.15	ND		0.17	ND		0.16	ND		0.23
PCB-55	ND		0.45	ND		0.45	ND		0.49	ND		0.31	ND		0.57	ND		0.25
PCB-56	ND		0.42	ND		0.41	ND		0.45	ND		0.28	ND		0.54	0.56	J	0.24
PCB-57	ND		0.68	ND		0.68	ND		0.75	ND		0.46	ND		0.83	ND		0.4
PCB-58	ND		0.56	ND		0.56	ND		0.6	ND		0.38	ND		0.68	ND		0.32
PCB-59/62/75	ND	C	0.65	ND	C	0.65	ND	C	0.72	ND	C	0.44	ND	C	0.77	ND	C	0.38
PCB-60	ND		0.43	ND		0.42	ND		0.46	ND		0.29	ND		0.56	ND		0.23

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	REF01			REF02			WR-217			WR-221A_2			WR-229A			WR-232		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-61/70/74/76	0.75	J q C	0.49	0.57	J q C	0.47	0.74	J C q	0.53	0.59	J q C	0.33	1	J q C	0.59	1.1	J C	0.27
PCB-63	ND		0.51	ND		0.5	ND		0.54	ND		0.34	ND		0.63	ND		0.28
PCB-64	ND		0.64	ND		0.62	ND		0.69	ND		0.42	ND		0.77	ND		0.36
PCB-66	ND		0.47	0.53	J	0.45	ND		0.5	ND		0.31	ND		0.57	ND		0.25
PCB-67	ND		0.43	ND		0.43	ND		0.47	ND		0.28	ND		0.55	ND		0.24
PCB-68	0.92	J	0.46	0.53	J q	0.44	0.76	J	0.49	0.74	J	0.31	0.37	J	0.58	0.19	J q	0.25
PCB-72	ND		0.52	ND		0.49	ND		0.55	ND		0.33	ND		0.64	ND		0.28
PCB-77	ND		0.47	ND		0.46	ND		0.5	ND		0.3	ND		0.59	ND		0.26
PCB-78																		
PCB-79	ND		0.34	ND		0.33	ND		0.36	ND		0.22	ND		0.43	ND		0.18
PCB-80	ND		0.43	ND		0.42	ND		0.46	ND		0.29	ND		0.54	ND		0.23
PCB-81	ND		0.4	ND		0.37	ND		0.42	ND		0.26	ND		0.54	0.25	J q	0.2
PCB-82	ND		0.17	ND		0.2	ND		0.29	ND		0.15	ND		0.28	ND		0.23
PCB-83/99	1	J q C	0.16	ND	C	0.19	ND	C	0.27	ND	C	0.14	ND	C	0.27	0.53	J C	0.21
PCB-84	ND		0.26	ND		0.32	ND		0.45	ND		0.22	ND		0.4	ND		0.4
PCB-85/116/117	ND	C	0.14	ND	C	0.17	ND	C	0.25	ND	C	0.12	ND	C	0.23	ND	C	0.2
PCB-86/87/97/109/119/125	ND	C	0.14	ND	C	0.17	ND	C	0.24	ND	C	0.12	ND	C	0.23	ND	C	0.2
PCB-88/91	ND	C	0.2	ND	C	0.25	ND	C	0.35	ND	C	0.18	ND	C	0.32	ND	C	0.29
PCB-89	ND		0.21	ND		0.26	ND		0.38	ND		0.19	ND		0.34	ND		0.31
PCB-90/101/113	1.6	J C	0.16	0.97	J C	0.18	ND	C	0.27	1.3	J C	0.14	2.4	J C	0.26	1	J q C	0.22
PCB-92	ND		0.19	1.4	J	0.23	ND		0.33	ND		0.16	2.2	J	0.31	ND		0.27
PCB-93/100	0.086	J q C	0.18	ND	J q C	0.21	ND	C	0.31	0.098	J q C	0.16	ND	J q C	0.3	ND	C	0.25
PCB-94	ND		0.25	ND		0.3	ND		0.43	ND		0.21	ND		0.37	ND		0.38
PCB-95	0.7	J q	0.24	ND		0.29	ND		0.42	ND		0.2	ND		0.36	ND		0.36
PCB-96	ND		0.21	ND		0.27	ND		0.37	ND		0.19	1.5	J q	0.3	ND		0.33
PCB-98/102	ND	C	0.19	ND	C	0.24	ND	C	0.34	ND	C	0.17	ND	C	0.31	ND	C	0.28
PCB-103	ND		0.21	ND		0.25	ND		0.37	ND		0.18	ND		0.32	ND		0.31
PCB-104																		
PCB-105	0.39	J q	0.12	ND		0.14	ND		0.11	ND		0.082	0.42	J	0.13	ND		0.081
PCB-106	ND		0.16	0.26		0.19	1.4		0.15	1.5		0.11	ND		0.16	0.68		0.12
PCB-107	ND		0.14	ND		0.15	ND		0.12	ND		0.095	ND		0.13	ND		0.097
PCB-108/124	ND	C	0.14	ND	C	0.17	ND	C	0.13	ND	C	0.1	ND	C	0.14	ND	C	0.11
PCB-110/115	0.92	J q C B	0.11	ND	C	0.13	ND	C	0.19	0.48	J q C B	0.098	ND	C	0.2	0.69	J q C B	0.15
PCB-111	ND		0.12	ND		0.14	ND		0.2	ND		0.11	ND		0.2	ND		0.17
PCB-112	ND		0.11	ND		0.14	ND		0.2	ND		0.098	ND		0.18	ND		0.16
PCB-114	ND		0.13	ND		0.15	ND		0.12	ND		0.09	ND		0.14	ND		0.091
PCB-118	1	J	0.12	0.27	J q	0.14	0.43	J q	0.11	0.35	J q	0.08	1.3	J	0.13	0.45	J	0.087
PCB-120	ND		0.083	ND		0.097	ND		0.14	ND		0.069	ND		0.14	ND		0.11
PCB-121																		
PCB-122	ND		0.19	ND		0.21	ND		0.17	ND		0.13	ND		0.18	ND		0.14
PCB-123	ND		0.13	ND		0.16	ND		0.12	ND		0.096	ND		0.15	ND		0.096
PCB-126	ND		0.12	ND		0.14	ND		0.11	ND		0.088	ND		0.14	ND		0.089
PCB-127	ND		0.13	ND		0.15	ND		0.12	ND		0.094	ND		0.14	ND		0.097
PCB-128/166	0.32	J C	0.14	ND	C	0.099	ND	C	0.13	ND	C	0.084	ND	C	0.32	ND	C	0.064
PCB-129/138/160/163	1.5	J q C B	0.16	0.65	J C B	0.11	0.77	J C B	0.15	1.1	J C B	0.092	1.5	J q C B	0.33	0.72	J C B	0.075
PCB-130	ND		0.2	ND		0.14	ND		0.2	ND		0.12	ND		0.45	ND		0.095
PCB-131	ND		0.21	ND		0.15	ND		0.2	ND		0.12	ND		0.41	ND		0.1
PCB-132	0.67	J	0.22	ND		0.15	ND		0.21	0.37	J q	0.13	ND		0.44	0.25	J q	0.1
PCB-133	ND		0.2	ND		0.14	ND		0.19	ND		0.12	ND		0.41	ND		0.097
PCB-134/143	ND	C	0.22	ND	C	0.15	ND	C	0.22	ND	C	0.13	ND	C	0.43	ND	C	0.11
PCB-135/151	0.47	J C	0.13	0.11	J q C	0.047	ND	C	0.066	ND	C	0.034	ND	C	0.099	ND	C	0.034
PCB-136	ND		0.084	ND		0.033	ND		0.047	ND		0.024	ND		0.068	0.12	J q	0.024

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	REF01			REF02			WR-217			WR-221A_2			WR-229A			WR-232		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-137	ND		0.15	ND		0.1	ND		0.14	ND		0.088	ND		0.37	ND		0.062
PCB-139/140	ND	C	0.16	ND	C	0.11	ND	C	0.15	ND	C	0.094	ND	C	0.35	ND	C	0.073
PCB-141	ND		0.16	ND		0.12	ND		0.15	ND		0.096	ND		0.35	ND		0.075
PCB-142																		
PCB-144	ND		0.1	ND		0.039	ND		0.054	ND		0.029	ND		0.085	ND		0.027
PCB-145	ND		0.094	ND		0.036	ND		0.052	ND		0.027	ND		0.073	ND		0.026
PCB-146	ND		0.15	ND		0.11	ND		0.15	ND		0.089	ND		0.32	ND		0.069
PCB-147/149	0.67	J q C	0.18	0.25	J q C	0.13	0.29	J C q	0.17	0.39	J C	0.11	0.83	J q C	0.37	0.35	J C	0.087
PCB-148	ND		0.1	ND		0.038	ND		0.056	ND		0.028	ND		0.085	ND		0.026
PCB-150	0.057	J q	0.08	ND		0.031	0.03	J q	0.045	ND	J q	0.023	ND		0.067	0.049	J q	0.022
PCB-152	1.2	q	0.1	0.085	J q	0.039	1.1		0.056	0.26	J q	0.029	ND	J q	0.075	0.16	J q	0.03
PCB-153/168	1.2	J C	0.12	0.53	J C	0.083	0.59	J C	0.11	0.8	J C	0.072	1.4	J C	0.28	0.67	J C	0.053
PCB-154	0.14	J	0.084	0.048	J	0.032	0.23	J	0.046	0.14	J	0.024	0.14	J	0.077	0.085	J q	0.021
PCB-155																		
PCB-156/157	0.17	J C	0.13	ND	C	0.096	0.15	J C q	0.13	ND	C	0.079	ND	C	0.32	ND	C	0.057
PCB-158	ND		0.1	ND		0.072	ND		0.095	ND		0.06	ND		0.23	0.053	J q	0.043
PCB-159	0.85		0.1	0.27	J	0.073	0.14	J	0.098	0.44		0.06	0.36	J	0.22	0.49	J	0.045
PCB-161	1.8		0.13	1.7		0.093	0.24		0.12	2		0.076	0.56		0.28	1.6		0.058
PCB-162	ND		0.11	ND		0.077	ND		0.11	ND		0.065	ND		0.24	ND		0.05
PCB-164	ND		0.15	ND		0.1	ND		0.15	ND		0.091	ND		0.31	ND		0.071
PCB-165	0.88		0.15	0.3		0.11	0.13		0.15	0.43		0.095	0.036		0.32	0.37	J q	0.077
PCB-167	ND		0.097	ND		0.066	ND		0.091	ND		0.058	ND		0.23	ND		0.041
PCB-169	ND		0.078	ND		0.055	ND		0.072	ND		0.045	ND		0.21	ND		0.032
PCB-170	ND		0.012	ND		0.045	ND		0.023	ND		0.0042	ND	L	0.026	ND		0.033
PCB-171/173	ND	C	0.013	ND	C	0.048	ND	C	0.025	ND	C	0.0045	ND	C	0.026	ND	C	0.037
PCB-172	ND		0.015	ND		0.055	ND		0.027	ND		0.0049	ND		0.029	ND		0.041
PCB-174	ND		0.014	ND		0.052	ND		0.026	ND		0.0049	ND		0.026	0.099	J q	0.039
PCB-175	ND		0.013	ND		0.049	ND		0.025	ND		0.0046	ND		0.026	ND		0.036
PCB-176	ND		0.011	ND		0.041	ND		0.02	ND		0.0036	ND		0.021	ND		0.031
PCB-177	ND		0.013	ND		0.047	ND		0.024	ND		0.0043	ND		0.025	ND		0.036
PCB-178	ND		0.015	ND		0.057	ND		0.029	ND		0.0054	ND		0.029	ND		0.045
PCB-179	0.086	J q	0.01	ND		0.037	ND		0.02	0.051	J q	0.0035	ND		0.018	ND		0.031
PCB-180/193	0.58	C	0.0098	ND	C	0.037	ND	C	0.018	0.15	q C	0.0033	ND	q C L	0.02	0.42	J C	0.026
PCB-181	ND		0.012	ND		0.045	ND		0.023	ND		0.0042	ND	L	0.025	ND		0.032
PCB-182	0.35	J	0.013	ND		0.045	ND		0.023	ND		0.0042	ND	L	0.026	ND		0.033
PCB-183/185	ND	C	0.013	ND	C	0.046	ND	C	0.023	ND	C	0.0042	ND	C	0.025	ND	C	0.035
PCB-184																		
PCB-186	ND		0.0098	ND		0.036	ND		0.018	ND		0.0033	ND		0.017	ND		0.028
PCB-187	0.32	J	0.011	ND		0.04	ND		0.019	0.21	J q	0.0037	ND	L	0.022	0.2	J	0.028
PCB-188	2.3		0.0095	0.24	J q	0.036	0.52	J	0.018	0.29	J	0.0031	0.19	J q	0.018	1.2	q	0.027
PCB-189	ND		0.034	ND		0.05	ND		0.042	ND		0.033	ND	L	0.11	0.038	J q	0.021
PCB-190	ND		0.0087	ND		0.032	ND		0.016	ND		0.0031	ND	L	0.018	ND		0.023
PCB-191	ND		0.009	ND		0.032	ND		0.016	ND		0.0031	ND	L	0.018	ND		0.024
PCB-192																		
PCB-194	0.037	J q	0.012	ND		0.012	0.035	J q	0.019	0.044	J q	0.014	ND	L	0.037	ND		0.016
PCB-195	0.018	J q	0.014	ND		0.014	ND		0.022	ND		0.016	0.16	J L	0.043	ND		0.019
PCB-196	ND		0.055	ND		0.018	ND		0.035	ND		0.021	ND	L	0.18	ND		0.018
PCB-197	0.35		0.037	0.17	q	0.012	0.17		0.024	0.57		0.014	ND	L	0.12	0.18		0.013
PCB-198/199	ND	C	0.054	ND	C	0.018	ND	C	0.035	ND	C	0.021	ND	C	0.16	0.088	J q C	0.019
PCB-200	ND		0.045	ND		0.015	ND		0.03	ND		0.018	ND	L	0.14	ND		0.016
PCB-201	ND		0.048	ND		0.016	ND		0.03	ND		0.018	ND	L	0.15	0.022	J q	0.016
PCB-202	ND		0.051	0.027	J q	0.017	ND		0.034	0.041	J	0.02	ND	L	0.14	0.018	J q	0.018

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD

Client ID	REF01			REF02			WR-217			WR-221A_2			WR-229A			WR-232		
Analyte	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL	Result	Qualifier	MDL
	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L	pg/L		pg/L
PCB-203	ND		0.046	ND		0.015	ND		0.029	ND		0.018	ND	L	0.15	ND		0.016
PCB-204																		
PCB-205	0.033	J q	0.01	0.033	J	0.01	0.0053	J q	0.017	0.022	J q	0.012	0.042	J L	0.033	0.023	J q	0.015
PCB-206	ND		0.049	ND		0.045	ND		0.063	ND		0.054	ND	L	0.24	ND		0.04
PCB-207	ND		0.039	0.0089		0.034	0.046		0.05	0.02		0.043	0.2	L	0.19	0.0022		0.03
PCB-208	ND		0.042	ND		0.039	ND		0.056	ND		0.046	ND	L	0.2	ND		0.034
PCB-209	0.013	L	0.0045	0.032	q	0.0026	0.062		0.0062	0.03	L	0.0025	0.36	L	0.011	ND	J q	0.0024
Total PCBs	**86**			**52**			**47**			**80**			**89**			**42**		

Notes:

B: Compound found in the blank and sample.
C: The compound co-eluted with other compounds.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L: Percent to steady state less than 10%.
MDL: method detection limit
ND: Non-detect
PCB: polychlorinated biphenyl
pg/L: picograms per liter
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ration. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.
Tetra Tech - Harford County, MD

Client ID	WR-233		
Analyte	Result	Qualifier	MDL
	pg/L		pg/L
PCB-1	ND		9.4
PCB-2	ND		6.6
PCB-3	ND		5.4
PCB-4	ND		9
PCB-5	ND		4.7
PCB-6	ND		4.3
PCB-7	ND		3.4
PCB-8	ND		2.8
PCB-9	ND		4.7
PCB-10	ND		7.1
PCB-11	ND		3.1
PCB-12/13	ND	C	2.2
PCB-14			
PCB-15	ND		1.4
PCB-16	ND		0.59
PCB-17	ND		0.39
PCB-18/30	ND	C	0.34
PCB-19	ND		0.78
PCB-20/28	0.51	J q C	0.34
PCB-21/33	ND	C	0.5
PCB-22	ND		0.42
PCB-23	ND		0.63
PCB-24	ND		0.39
PCB-25	ND		0.39
PCB-26/29	ND	C	0.47
PCB-27	ND		0.37
PCB-31	ND		0.37
PCB-32	0.79	J q	0.27
PCB-34	ND		0.6
PCB-35	ND		0.33
PCB-36			
PCB-37	ND		0.24
PCB-38	ND		0.39
PCB-39	ND		0.29
PCB-40/41/71	ND	C	0.37
PCB-42	ND		0.31
PCB-43/73	ND	C	0.36
PCB-44/47/65	1.2	J C B	0.36
PCB-45/51	ND	C	0.51
PCB-46	ND		0.67
PCB-48	ND		0.34
PCB-49/69	0.43	J q C	0.25
PCB-50/53	ND	C	0.5
PCB-52	0.71	J q	0.52
PCB-54	ND		0.11
PCB-55	ND		0.15
PCB-56	ND		0.14
PCB-57	ND		0.24
PCB-58	ND		0.19
PCB-59/62/75	ND	C	0.23
PCB-60	ND		0.14

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.
Tetra Tech - Harford County, MD

Client ID	WR-233		
Analyte	Result pg/L	Qualifier	MDL pg/L
PCB-61/70/74/76	0.51	J q C	0.16
PCB-63	ND		0.17
PCB-64	ND		0.22
PCB-66	ND		0.15
PCB-67	ND		0.15
PCB-68	0.031	J q	0.14
PCB-72	ND		0.17
PCB-77	ND		0.15
PCB-78			
PCB-79	ND		0.11
PCB-80	ND		0.14
PCB-81	ND		0.12
PCB-82	ND		0.18
PCB-83/99	0.18	J q C	0.16
PCB-84	ND		0.31
PCB-85/116/117	ND	C	0.16
PCB-86/87/97/109/119/125	ND	C	0.15
PCB-88/91	ND	C	0.22
PCB-89	ND		0.24
PCB-90/101/113	0.68	J C	0.17
PCB-92	ND		0.21
PCB-93/100	ND	C	0.2
PCB-94	ND		0.3
PCB-95	ND		0.28
PCB-96	ND		0.28
PCB-98/102	ND	C	0.22
PCB-103	ND		0.25
PCB-104			
PCB-105	0.09	J	0.065
PCB-106	ND	q	0.1
PCB-107	ND		0.08
PCB-108/124	ND	C	0.085
PCB-110/115	0.32	J q C B	0.12
PCB-111	ND		0.12
PCB-112	ND		0.13
PCB-114	ND		0.075
PCB-118	0.39	J	0.066
PCB-120	ND		0.08
PCB-121			
PCB-122	ND		0.12
PCB-123	ND		0.079
PCB-126	ND		0.069
PCB-127	ND		0.075
PCB-128/166	0.071	J q C	0.051
PCB-129/138/160/163	0.55	J C B	0.062
PCB-130	ND		0.081
PCB-131	ND		0.084
PCB-132	ND		0.09
PCB-133	ND		0.081
PCB-134/143	ND	C	0.097
PCB-135/151	0.073	J q C	0.013
PCB-136	ND		0.0087

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.
Tetra Tech - Harford County, MD

Client ID	WR-233		
Analyte	Result pg/L	Qualifier	MDL pg/L
PCB-137	ND		0.05
PCB-139/140	ND	C	0.059
PCB-141	ND		0.062
PCB-142			
PCB-144	ND		0.0098
PCB-145	ND		0.0097
PCB-146	ND		0.059
PCB-147/149	0.2	J C	0.073
PCB-148	ND		0.0094
PCB-150	0.05	J q	0.008
PCB-152	0.2	J q	0.011
PCB-153/168	0.44	J C	0.044
PCB-154	0.045	J q	0.0075
PCB-155			
PCB-156/157	ND	C	0.047
PCB-158	ND		0.036
PCB-159	0.12	J	0.038
PCB-161	1.3		0.05
PCB-162	ND		0.043
PCB-164	ND		0.061
PCB-165	0.1	J q	0.065
PCB-167	ND		0.034
PCB-169	ND		0.025
PCB-170	ND		0.0022
PCB-171/173	ND	C	0.0025
PCB-172	ND		0.0028
PCB-174	ND		0.0027
PCB-175	ND		0.0026
PCB-176	ND		0.0022
PCB-177	ND		0.0025
PCB-178	ND		0.0032
PCB-179	ND		0.0022
PCB-180/193	ND	C	0.0017
PCB-181	ND		0.0022
PCB-182	ND		0.0022
PCB-183/185	ND	C	0.0024
PCB-184			
PCB-186	ND		0.0021
PCB-187	0.083	J q	0.0019
PCB-188	0.32		0.0017
PCB-189	0.022	J q	0.0074
PCB-190	ND		0.0015
PCB-191	ND		0.0015
PCB-192			
PCB-194	0.01	J q	0.0046
PCB-195	0.01	J	0.0054
PCB-196	ND		0.01
PCB-197	0.14	q	0.0068
PCB-198/199	ND	C	0.011
PCB-200	ND		0.0094
PCB-201	ND		0.0094
PCB-202	ND		0.01

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.
Tetra Tech - Harford County, MD

Client ID	WR-233		
Analyte	Result pg/L	Qualifier	MDL pg/L
PCB-203	ND		0.0089
PCB-204			
PCB-205	0.0079	J q	0.0041
PCB-206	ND		0.016
PCB-207	0.034		0.012
PCB-208	ND		0.014
PCB-209	0.0066	q	0.0017
Total PCBs	**10**		

Notes:
B: Compound found in the blank and sample.
C: The compound co-eluted with other compounds.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L: Percent to steady state less than 10%.
MDL: method detection limit
ND: Non-detect
PCB: polychlorinated biphenyl
pg/L: picograms per liter
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ration. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD (90-91 day deployment time Calculations)

Client ID	DSB-85			JR-201			PR-77			UT-66 A2		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-1	ND		7.8	ND		5.9	29	J q	5.3	ND		5.5
PCB-2	12	J q	5.4	ND		4.1	55	J q	3.6	ND		3.8
PCB-3	12	J	4.3	ND		3.3	33	J	2.8	ND		2.9
PCB-4	ND		14	ND		3.8	ND		4.8	ND		4.4
PCB-5	ND		6.6	ND		1.9	ND		2.5	ND		2.1
PCB-6	ND		5.8	ND		1.6	ND		2.1	ND		1.9
PCB-7	ND		4.5	ND		1.3	ND		1.7	ND		1.5
PCB-8	ND		4.2	ND		1.2	ND		1.5	3.9	J q	1.3
PCB-9	ND		6.2	ND		1.8	ND		2.3	ND		2
PCB-10	ND		11	ND		2.9	ND		3.8	ND		3.3
PCB-11	ND		4.3	7.9	J B	1.2	18	J q B	1.6	17	J q B	1.4
PCB-12/13	ND	C	3.1	ND	C	0.89	ND	C	1.1	ND	C	1
PCB-14												
PCB-15	ND		2	1.5	J q	0.55	ND		0.71	ND		0.62
PCB-16	0.96	J q	0.47	ND		0.48	ND		0.46	1.7	J q	0.48
PCB-17	0.86	J q	0.31	ND		0.32	ND		0.3	1.3	J q	0.32
PCB-18/30	1.8	J q C	0.27	ND	C	0.28	1.9	J C	0.27	2.4	J C	0.28
PCB-19	ND		0.63	2.8	J	0.65	ND		0.61	ND		0.63
PCB-20/28	2	J C	0.29	0.84	J C	0.27	0.98	J q C	0.18	3.6	J C	0.19
PCB-21/33	ND	C	0.42	ND	C	0.39	ND	C	0.27	1.3	J C	0.28
PCB-22	ND		0.36	ND		0.33	ND		0.23	0.71	J	0.24
PCB-23	ND		0.53	ND		0.49	ND		0.34	ND		0.35
PCB-24	ND		0.32	ND		0.32	ND		0.31	ND		0.32
PCB-25	ND		0.34	ND		0.31	ND		0.21	ND		0.22
PCB-26/29	ND	C	0.4	ND	C	0.37	ND	C	0.26	ND	C	0.26
PCB-27	1.1	J q	0.28	ND		0.3	ND		0.28	0.68	J q	0.3
PCB-31	1.9	J	0.32	0.8	J	0.29	0.95	J	0.2	2.2	J	0.21
PCB-32	ND		0.2	0.98	J	0.21	0.63	J	0.2	1.8	J q	0.21
PCB-34	ND		0.51	ND		0.47	ND		0.33	ND		0.33
PCB-35	ND		0.28	ND		0.26	ND		0.18	ND		0.18
PCB-36												
PCB-37	ND		0.2	ND		0.18	0.23	J	0.13	0.79	J q	0.13
PCB-38	ND		0.33	ND		0.3	ND		0.21	ND		0.22
PCB-39	ND		0.25	ND		0.23	ND		0.16	ND		0.16
PCB-40/41/71	ND	C	0.15	ND	C	0.12	ND	C	0.1	0.8	J C	0.072
PCB-42	ND		0.13	ND		0.11	0.13	J q	0.088	0.48	J q	0.063
PCB-43/73	ND	C	0.14	ND	C	0.12	ND	C	0.097	ND	C	0.069
PCB-44/47/65	4.9	J C B	0.15	0.95	J C B	0.13	0.75	J C B	0.1	1.8	J C B	0.073
PCB-45/51	ND	C	0.21	ND	C	0.17	ND	C	0.14	ND	C	0.1
PCB-46	ND		0.28	ND		0.23	ND		0.19	ND		0.13
PCB-48	ND		0.14	ND		0.12	0.14	J q	0.097	0.41	J	0.068
PCB-49/69	1.1	J C	0.1	ND	C	0.085	0.31	J q C	0.07	0.87	J q C	0.05
PCB-50/53	ND	C	0.21	ND	C	0.17	ND	C	0.14	ND	C	0.1
PCB-52	2.3	J	0.21	0.71	J	0.18	1.2	J	0.15	2.4	J q	0.1
PCB-54	ND		0.15	ND		0.084	ND		0.056	ND		0.073
PCB-55	ND		0.064	ND		0.051	ND		0.041	ND		0.03
PCB-56	ND		0.059	2.3	J	0.047	0.14	J	0.037	0.21	J q	0.028
PCB-57	ND		0.099	ND		0.081	0.1	J q	0.065	ND		0.048
PCB-58	ND		0.081	ND		0.065	ND		0.053	ND		0.038
PCB-59/62/75	ND	C	0.095	ND	C	0.077	ND	C	0.062	0.23	J q C	0.046
PCB-60	ND		0.06	ND		0.047	0.14	J	0.038	0.4	J q	0.028
PCB-61/70/74/76	2.3	J C	0.068	0.45	J q C	0.055	0.82	J q C	0.045	2.2	J C	0.031

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD (90-91 day deployment time Calculations)

Client ID	DSB-85			JR-201			PR-77			UT-66 A2		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-63	ND		0.071	ND		0.057	0.054	J q	0.046	ND		0.034
PCB-64	0.3	J q	0.091	ND		0.075	0.18	J q	0.061	0.63	J q	0.044
PCB-66	1	J	0.065	0.25	J q	0.052	0.6	J	0.042	1.2	J q	0.03
PCB-67	ND		0.062	ND		0.05	ND		0.04	ND		0.029
PCB-68	0.11	J q	0.064	0.091	J q	0.051	ND		0.042	0.08	J q	0.029
PCB-72	ND		0.071	ND		0.057	ND		0.046	ND		0.033
PCB-77	0.22	J q	0.065	ND		0.051	ND		0.04	ND		0.029
PCB-78												
PCB-79	ND		0.047	ND		0.037	ND		0.029	ND		0.022
PCB-80	ND		0.061	ND		0.048	ND		0.039	ND		0.028
PCB-81	ND		0.054	ND		0.042	ND		0.034	0.063	J q	0.024
PCB-82	ND		0.13	ND		0.08	ND		0.062	ND		0.099
PCB-83/99	1.7	J q C	0.13	0.69	J C	0.075	0.65	J C	0.057	0.62	J C	0.094
PCB-84	ND		0.21	ND		0.14	0.29	J	0.11	ND		0.17
PCB-85/116/117	ND	C	0.12	0.28	J q C	0.072	0.27	J q C	0.054	ND	C	0.087
PCB-86/87/97/109/119/125	1.4	J q C	0.11	0.63	J C	0.07	0.6	J C	0.052	0.59	J q C	0.084
PCB-88/91	ND	C	0.16	ND	C	0.1	0.26	J q C	0.077	ND	C	0.13
PCB-89	ND		0.17	ND		0.11	ND		0.081	ND		0.13
PCB-90/101/113	2.4	J C	0.13	1.5	J q C	0.081	1.3	J C	0.06	0.95	J q C	0.095
PCB-92	1.4	J	0.15	ND		0.095	0.45	J	0.073	0.4	J q	0.12
PCB-93/100	ND	C	0.15	ND	C	0.09	ND	C	0.069	0.14	J q C	0.11
PCB-94	ND		0.2	ND		0.14	ND		0.11	ND		0.17
PCB-95	1.1	J q	0.2	0.68	J	0.13	0.64	J q	0.096	0.49	J q	0.16
PCB-96	ND		0.18	ND		0.12	ND		0.094	ND		0.15
PCB-98/102	ND	C	0.15	ND	C	0.1	ND	C	0.076	ND	C	0.12
PCB-103	ND		0.17	ND		0.11	ND		0.087	ND		0.13
PCB-104												
PCB-105	0.58	J	0.087	0.27	J	0.045	0.2	J q	0.038	0.16	J q	0.044
PCB-106	1.2		0.11	0.91		0.065	0.7		0.056	0.99		0.065
PCB-107	ND		0.093	0.092	J	0.053	0.095	J	0.045	ND		0.054
PCB-108/124	ND	C	0.1	0.1	J C	0.059	ND	C	0.048	ND	C	0.059
PCB-110/115	1.6	J C	0.09	0.88	J q C	0.055	1.1	J C	0.041	0.75	J q C	0.069
PCB-111	ND		0.097	ND		0.059	ND		0.044	ND		0.069
PCB-112	ND		0.09	ND		0.058	ND		0.044	ND		0.071
PCB-114	ND		0.094	ND		0.05	ND		0.042	ND		0.054
PCB-118	1.7		0.086	0.92	J	0.048	0.67	J	0.039	0.44	J	0.047
PCB-120	ND		0.064	ND		0.038	ND		0.028	ND		0.046
PCB-121												
PCB-122	ND		0.13	ND		0.077	ND		0.061	ND		0.077
PCB-123	ND		0.094	ND		0.05	ND		0.042	ND		0.054
PCB-126	ND		0.086	ND		0.045	ND		0.037	ND		0.044
PCB-127	ND		0.092	ND		0.053	ND		0.043	ND		0.053
PCB-128/166	ND	C	0.083	0.34	J C	0.052	0.086	J q C	0.035	ND	C	0.037
PCB-129/138/160/163	1.8	J C	0.095	4.7	C	0.061	0.92	J C	0.041	0.51	J C	0.042
PCB-130	ND		0.13	0.12	J	0.079	ND		0.053	ND		0.057
PCB-131	ND		0.12	ND		0.081	ND		0.057	ND		0.057
PCB-132	0.6	J	0.13	0.49	J	0.085	0.18	J	0.06	ND		0.06
PCB-133	ND		0.12	ND		0.078	ND		0.054	ND		0.057
PCB-134/143	ND	C	0.13	ND	C	0.089	ND	C	0.066	ND	C	0.065
PCB-135/151	0.72	J C	0.061	2	C	0.013	0.37	J C	0.025	0.19	J q C	0.028
PCB-136	ND		0.044	0.11	J q	0.0088	0.059	J q	0.017	ND		0.019
PCB-137	ND		0.092	ND		0.051	ND		0.034	ND		0.036

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD (90-91 day deployment time Calculations)

Client ID	DSB-85			JR-201			PR-77			UT-66 A2		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-139/140	ND	C	0.096	ND	C	0.058	ND	C	0.041	ND	C	0.04
PCB-141	0.23	J q	0.099	0.49	J	0.06	0.077	J q	0.042	ND		0.044
PCB-142												
PCB-144	ND		0.051	0.11	J	0.01	ND		0.019	ND		0.022
PCB-145	ND		0.048	ND		0.01	ND		0.02	ND		0.022
PCB-146	0.25	J	0.092	0.59		0.056	ND		0.039	ND		0.04
PCB-147/149	1.2	J C B	0.11	2.1	C B	0.072	0.52	J C B	0.049	0.31	J C B	0.05
PCB-148	ND		0.053	ND		0.01	ND		0.019	ND		0.021
PCB-150	ND		0.042	ND		0.0082	0.031	J q	0.016	ND		0.018
PCB-152	0.069	J q	0.051	0.044	J q	0.011	ND		0.022	ND		0.024
PCB-153/168	1.6	J C B	0.072	4.1	C B	0.044	0.64	J C B	0.029	0.39	J C B	0.03
PCB-154	0.27	J	0.044	0.078	J	0.0079	0.054	J	0.015	0.054	J q	0.017
PCB-155												
PCB-156/157	0.32	J C	0.09	0.36	J q C	0.051	0.28	J q C	0.035	ND	C	0.036
PCB-158	ND		0.061	0.21	J	0.037	0.052	J	0.025	ND		0.026
PCB-159	0.72		0.061	0.22	J	0.038	0.42		0.025	0.64		0.026
PCB-161	0.076		0.08	1		0.048	1.2		0.034	0.94		0.035
PCB-162	ND		0.069	ND		0.04	ND		0.028	ND		0.031
PCB-164	ND		0.089	0.31	J	0.059	0.043	J q	0.041	ND		0.042
PCB-165	1.1		0.093	0.11	J q	0.062	0.44		0.043	0.79		0.044
PCB-167	ND		0.056	0.12	J q	0.033	ND		0.022	ND		0.022
PCB-169	ND		0.047	ND		0.025	ND		0.016	ND		0.017
PCB-170	ND		0.028	0.83		0.0092	0.2	J	0.11	ND		0.0076
PCB-171/173	ND	C	0.03	ND	C	0.01	ND	C	0.13	ND	C	0.0088
PCB-172	ND		0.033	ND		0.011	ND		0.13	ND		0.0097
PCB-174	ND		0.031	0.95		0.011	0.19	J	0.14	ND		0.0094
PCB-175	ND		0.03	ND		0.01	ND		0.13	ND		0.0089
PCB-176	ND		0.025	ND		0.0088	ND		0.11	ND		0.0076
PCB-177	ND		0.029	0.73		0.01	ND		0.12	ND		0.0086
PCB-178	ND		0.036	0.42		0.012	ND		0.16	ND		0.011
PCB-179	ND		0.023	0.42		0.0084	ND		0.11	ND		0.0075
PCB-180/193	0.21	q C B	0.022	1.9	C B	0.0072	0.55	C B	0.087	ND	C	0.0061
PCB-181	ND		0.028	ND		0.009	ND		0.11	ND		0.0077
PCB-182	0.39	J	0.028	ND		0.0093	ND		0.11	ND		0.0079
PCB-183/185	ND	C	0.029	0.58	J C	0.0096	ND	C	0.12	ND	C	0.0083
PCB-184												
PCB-186	ND		0.022	ND		0.0079	ND		0.1	ND		0.007
PCB-187	0.45	J	0.024	1.5		0.0078	0.15	J q	0.095	ND		0.0067
PCB-188	0.68	q	0.021	0.16	J	0.0073	0.98		0.093	0.84		0.0064
PCB-189	ND		0.026	0.071	J	0.014	ND		0.0065	0.022	J q	0.011
PCB-190	ND		0.02	0.24	J	0.0064	ND		0.078	ND		0.0055
PCB-191	ND		0.021	ND		0.0067	ND		0.08	ND		0.0056
PCB-192												
PCB-194	ND		0.024	0.14	J	0.0098	0.019	J	0.004	ND		0.0044
PCB-195	ND		0.026	0.094	J q	0.011	0.0097	J	0.0047	0.0052	J q	0.0052
PCB-196	ND		0.062	0.075	J	0.0082	ND		0.012	ND		0.016
PCB-197	ND	q	0.042	0.36		0.0056	0.19		0.0082	0.039		0.011
PCB-198/199	ND	C	0.06	0.27	J C	0.0086	0.061	J C	0.012	ND	C	0.017
PCB-200	ND		0.052	ND		0.0072	ND		0.01	ND		0.014
PCB-201	ND		0.054	0.027	J q	0.0074	ND		0.011	ND		0.014
PCB-202	ND		0.055	0.064	J q	0.0081	ND		0.012	ND		0.015
PCB-203	ND		0.053	0.13	J	0.0069	0.028	J	0.0097	ND		0.013

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

Tetra Tech - Harford County, MD (90-91 day deployment time Calculations)

Client ID	DSB-85			JR-201			PR-77			UT-66 A2		
Analyte	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L	Result pg/L	Qualifier	MDL pg/L
PCB-204												
PCB-205	0.022	J q	0.021	0.014	J q	0.0087	0.011	J	0.0036	0.017	J	0.004
PCB-206	ND		0.081	0.027	J q	0.016	ND		0.011	ND		0.014
PCB-207	0.16		0.064	0.0092		0.012	0.043		0.0092	0.03		0.01
PCB-208	ND		0.069	ND		0.014	ND		0.01	ND		0.012
PCB-209	0.11	L	0.0069	0.091		0.0013	0.018		0.00061	0.031		0.0019
Total PCBs	**69**			**53**			**159**			**59**		

Notes:

B: Compound found in the blank and sample.
C: The compound co-eluted with other compounds.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L: Percent to steady state less than 10%.
MDL: method detection limit
ND: Non-detect
PCB: polychlorinated biphenyl
pg/L: picograms per liter
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ration. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Appendix D

Table D-1. Summary of individual PCB congener concentration results among sampled monitoring sites

PCB Congener	PRC	Average of Ref Values[a] (pg/L)	Number of Non-Detected Values Among Sites	Number of Detected Values Among Sites	Number of Values that Exceeded Average Ref Values	Min Value (pg/L)	Max Value (pg/L)
PCB-1		ND	17	4	6	9.80	29.0
PCB-2		16	9	14	4	6.50	55.0
PCB-3		ND	15	8	8	6.50	33.0
PCB-4		ND	22	1	1	36.00	36.0
PCB-5		ND	23	0	0	0	0
PCB-6		ND	22	1	0	5.10	5.10
PCB-7		ND	23	0	0	0	0
PCB-8		ND	16	7	6	3.90	17.00
PCB-9		ND	23	0	0	0	0
PCB-10		ND	23	0	0	0	0
PCB-11		11.4	9	14	6	7.20	26.00
PCB-12/13		ND	23	0	0	0	0
PCB-14	PRC	ND	0	0	0	0	0
PCB-15		ND	16	7	6	1.40	31.00
PCB-16		ND	13	10	9	0.96	5.70
PCB-17		ND	9	14	14	0.74	12.00
PCB-18/30		4.25	3	20	6	0.91	11.00
PCB-19		ND	16	7	7	1.30	10.00
PCB-20/28		1.6	1	22	12	0.46	35.00
PCB-21/33		ND	15	8	7	0.69	2.30
PCB-22		ND	15	8	8	0.57	4.20
PCB-23		ND	23	0	0	0	0
PCB-24		ND	23	0	0	0	0
PCB-25		ND	21	2	2	1.40	2.50
PCB-26/29		ND	19	4	4	0.94	4.10
PCB-27		ND	16	7	7	0.50	6.30
PCB-31		1.1	2	21	14	0.55	19.00
PCB-32		1.79	3	20	5	0.63	6.90
PCB-34		ND	23	0	0	0	0
PCB-35		ND	22	1	0	0.84	0.84
PCB-36	PRC	ND	0	0	0	0	0
PCB-37		ND	17	6	6	0.23	4.20
PCB-38		ND	22	1	1	0.54	0.54
PCB-39		ND	22	1	1	3.00	3.00
PCB-40/41/71		ND	20	3	3	0.80	3.30
PCB-42		ND	19	4	4	0.13	1.60
PCB-43/73		ND	22	1	1	1.20	1.20
PCB-44/47/65		8.5	0	23	8	0.75	20.00
PCB-45/51		ND	21	2	2	2.00	2.10

PCB Congener	PRC	Average of Ref Values[a] (pg/L)	Number of Non-Detected Values Among Sites	Number of Detected Values Among Sites	Number of Values that Exceeded Average Ref Values	Min Value (pg/L)	Max Value (pg/L)
PCB-46		ND	23	0	0	0	0
PCB-48		ND	19	4	4	0.14	1.70
PCB-49/69		ND	12	11	11	0.31	6.50
PCB-50/53		ND	21	2	2	1.60	3.20
PCB-52		ND	10	13	13	0.71	15.00
PCB-54		ND	22	1	1	0.34	0.34
PCB-55		ND	22	1	1	0.46	0.46
PCB-56		ND	16	7	7	0.14	2.30
PCB-57		ND	22	1	1	0.10	0.10
PCB-58		ND	23	0	0	0	0
PCB-59/62/75		ND	20	3	3	0.23	1.50
PCB-60		ND	16	7	7	0.10	2.20
PCB-61/70/74/76		0.66	1	22	17	0.45	20.00
PCB-63		ND	20	3	3	0.05	1.70
PCB-64		ND	15	8	8	0.18	4.40
PCB-66		ND	8	15	14	0.15	12.00
PCB-67		ND	21	2	2	0.34	0.60
PCB-68		0.725	3	20	2	0.03	0.92
PCB-72		ND	23	0	0	0.00	0.00
PCB-77		ND	19	4	4	0.12	0.99
PCB-78	PRC	ND	0	0	0	0	0
PCB-79		ND	23	0	0	0	0
PCB-80		ND	23	0	0	0	0
PCB-81		ND	19	4	4	0.06	0.44
PCB-82		ND	23	0	0	0	0
PCB-83/99		ND	7	16	15	0.18	3.80
PCB-84		ND	22	1	1	0.29	0.29
PCB-85/116/117		ND	16	7	7	0.27	1.40
PCB-86/87/97/109/119/125		ND	11	12	12	0.39	2.90
PCB-88/91		ND	20	3	3	0.26	1.00
PCB-89		ND	23	0	0	0	0
PCB-90/101/113		1.285	1	22	15	0.60	4.20
PCB-92		ND	12	11	10	0.40	2.20
PCB-93/100		ND	18	5	4	0.09	0.26
PCB-94		ND	23	0	0	0	0
PCB-95		ND	9	14	13	0.27	2.70
PCB-96		ND	21	2	2	0.92	1.50
PCB-98/102		ND	23	0	0	0	0
PCB-103		ND	23	0	0	0	0
PCB-104	PRC	ND	0	0	0	0	0
PCB-105		ND	6	17	16	0.09	0.93
PCB-106		ND	4	19	18	0.02	1.50

PCB Congener	PRC	Average of Ref Values[a] (pg/L)	Number of Non-Detected Values Among Sites	Number of Detected Values Among Sites	Number of Values that Exceeded Average Ref Values	Min Value (pg/L)	Max Value (pg/L)
PCB-107		ND	20	3	3	0.09	0.28
PCB-108/124		ND	21	2	2	0.10	0.17
PCB-110/115		ND	3	20	19	0.27	3.80
PCB-111		ND	23	0	0	0	0
PCB-112		ND	23	0	0	0	0
PCB-114		ND	22	1	1	0.13	0.13
PCB-118		0.635	0	23	13	0.27	2.30
PCB-120		ND	23	0	0	0	0
PCB-121	PRC	ND	0	0	0	0	0
PCB-122		ND	23	0	0	0	0
PCB-123		ND	22	1	1	0.12	0.12
PCB-126		ND	23	0	0	0	0
PCB-127		ND	23	0	0	0	0
PCB-128/166		ND	10	13	12	0.07	0.45
PCB-129/138/160/163		1.075	0	23	11	0.51	4.70
PCB-130		ND	20	3	3	0.10	0.27
PCB-131		ND	23	0	0	0	0
PCB-132		ND	9	14	13	0.18	1.30
PCB-133		ND	23	0	0	0	0
PCB-134/143		ND	22	1	0	0.26	0.26
PCB-135/151		0.29	6	17	12	0.07	2.00
PCB-136		ND	12	11	11	0.06	0.56
PCB-137		ND	23	0	0	0	0
PCB-139/140		ND	23	0	0	0	0
PCB-141		ND	12	11	11	0.08	0.49
PCB-142	PRC	ND	0	0	0	0	0
PCB-144		ND	22	1	1	0.11	0.11
PCB-145		ND	22	1	1	0.23	0.23
PCB-146		ND	16	7	7	0.06	0.59
PCB-147/149		0.46	0	23	15	0.20	2.70
PCB-148		ND	23	0	0	0	0
PCB-150		ND	12	11	10	0.03	0.21
PCB-152		0.643	8	15	2	0.04	1.70
PCB-153/168		0.865	0	23	11	0.39	4.10
PCB-154		0.094	2	21	10	0.04	0.27
PCB-155	PRC	ND	0	0	0	0	0
PCB-156/157		ND	10	13	12	0.08	0.36
PCB-158		ND	12	11	11	0.05	0.30
PCB-159		0.56	1	22	2	0.04	0.85
PCB-161		1.75	1	22	2	0.08	2.00
PCB-162		ND	23	0	0	0	0
PCB-164		ND	16	7	7	0.04	0.31
PCB-165		0.59	2	21	2	0.04	1.10

PCB Congener	PRC	Average of Ref Values[a] (pg/L)	Number of Non-Detected Values Among Sites	Number of Detected Values Among Sites	Number of Values that Exceeded Average Ref Values	Min Value (pg/L)	Max Value (pg/L)
PCB-167		ND	19	4	4	0.09	0.15
PCB-169		ND	23	0	0	0	0
PCB-170		ND	20	3	3	0.20	0.83
PCB-171/173		ND	23	0	0	0	0
PCB-172		ND	23	0	0	0	0
PCB-174		ND	13	10	10	0.10	0.95
PCB-175		ND	23	0	0	0	0
PCB-176		ND	23	0	0	0	0
PCB-177		ND	18	5	5	0.23	0.73
PCB-178		ND	20	3	3	0.20	0.42
PCB-179		ND	11	12	11	0.05	0.42
PCB-180/193		ND	8	15	14	0.04	2.00
PCB-181		ND	23	0	0	0	0
PCB-182		ND	19	4	3	0.19	0.39
PCB-183/185		ND	18	5	5	0.20	0.61
PCB-184	PRC	ND	0	0	0	0	0
PCB-186		ND	23	0	0	0	0
PCB-187		ND	5	18	17	0.08	1.50
PCB-188		1.27	1	22	0	0.07	2.30
PCB-189		ND	17	6	6	0.02	0.09
PCB-190		ND	22	1	1	0.24	0.24
PCB-191		ND	23	0	0	0	0
PCB-192	PRC	ND	0	0	0	0	0
PCB-194		ND	6	17	16	0.01	0.14
PCB-195		ND	8	15	14	0.01	0.16
PCB-196		ND	21	2	2	0.08	0.15
PCB-197		0.26	2	21	10	0.04	0.99
PCB-198/199		ND	16	7	7	0.06	0.33
PCB-200		ND	18	5	5	0.17	0.41
PCB-201		ND	20	3	3	0.02	0.03
PCB-202		ND	17	6	5	0.02	0.12
PCB-203		ND	20	3	3	0.03	0.21
PCB-204	PRC	ND	0	0	0	0	0
PCB-205		0.033	1	22	4	0.01	0.13
PCB-206		ND	22	1	1	0.03	0.03
PCB-207		ND	6	17	16	0.00	0.20
PCB-208		ND	23	0	0	0	0
PCB-209		0.023	2	21	17	0.01	0.36

ND = Not detected.
PCB = Polychlorinated biphenyl.
pg/L = picogram/liter.
PRC = Performance reference compound.
Ref = Reference site.
[a] Reference values were calculated from the mean of the two reference sites.