Badin Business Park LLC

c/o Alcoa Corporation
201 Isabella Street
Suite 500
Pittsburgh, PA 15212-5858 USA
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December 5, 2018

Mr. Robert C. McDaniel
Facility Management Branch
Hazardous Waste Section
North Carolina Department of Environmental Quality
217 West Jones Street
Raleigh, North Carolina 27603

VIA ELECTRONIC MAIL

Re: Investigative Report for the Little Mountain Creek Area
Badin Business Park (f/k/a Alcoa - Badin Works)
Badin, North Carolina
EPA ID: NCD 003 162 542

Dear Mr. McDaniel:

Badin Business Park LLC respectfully submits the above-referenced report for your review. The report is being provided as a condition of the April 2, 2018, Investigative Work Plan for the Phases 4 and 5 Corrective Measures Study, Alcoa/Badin Landfill, and Former Ball Field.

Should you have any questions or comments, please contact Jason Mibroda of Alcoa at (412) 315-2783 at your convenience.

Sincerely,

Ronald M. Morosky
Director, Corporate Remediation

Enc.

cc: Jason Mibroda, Alcoa
Teresa Rodriguez, NCDEQ

ENVIRONEERING, INC.

INVESTIGATIVE REPORT FOR THE LITTLE MOUNTAIN CREEK AREA

BADIN BUSINESS PARK FACILITY BADIN, NORTH CAROLINA

December 5, 2018

Prepared for:

Badin Business Park LLC
201 Isabella Street,
Pittsburgh, PA 15212

Prepared by:

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ENVIRONEERING, INC.

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1.0 INTRODUCTION

The April 28, 2017 *Investigative Work Plan for the Phase 4 and 5 Corrective Measures Study, Alcoa/Badin Landfill, and Former Ball Field* (Work Plan) was developed as a guidance document in support of sampling and investigative activities at the Badin Business Park LLC, formerly known as the Alcoa Badin Works facility. The Work Plan was prepared following receipt of the North Carolina Department of Environmental Quality (NCDEQ) January 23, 2017 correspondence concerning the review of Phase 4 and 5 of the Corrective Measures Study (CMS), the Expanded Pre-CERCLIS Screening Assessment (EPSA) for the Former Ball Field, and the Site Inspection Report (SIR) for the Alcoa/Badin Landfill. NCDEQ determined that further evaluation was warranted and requested that a demonstration be made that identified items had been evaluated or prepare a work plan to evaluate those items. Select items were addressed in a March 3, 2017 written response and in a meeting with NCDEQ on March 28, 2017. On April 2, 2018, the Work Plan was revised incorporating requirements from the January 31, 2018 conditional approval letter and the instream monitoring study requirements of the September 29, 2017 Final NPDES Permit, Condition A. (8.). Implementation of the Work Plan began in April 2018.

The approach for investigative activities was developed based on information obtained from site reconnaissance, previous investigations, and remedial activities conducted at the facility. The Work Plan was organized by the tasks:

- Task 1 – Alcoa/Badin Landfill
- Task 2 – Main Plant Area
- Task 3 – Former Ball Field Area

The scope of work for each of the tasks was summarized in Section 2 of the Work Plan. The following report details activities in support of Task 1, investigations at the Alcoa/Badin Landfill.

1.1 Site Overview

The facility is located on State Highway 740 within the Town of Badin, North Carolina, and occupies approximately 123 acres of land. Production at the Badin Works facility began in 1916 and continued through 2002. Principal products once manufactured at the facility included carbon cathodes and anodes, continuous cast sheets, and specialty metals. The facility was permanently closed in 2010 and several buildings were razed in 2012. In 2016, the legal owner and operator of the facility transferred from Alcoa Inc. to the Badin Business Park LLC, a subsidiary Alcoa Corporation (Alcoa). The Alcoa/Badin Landfill and Little Mountain Creek Area is located across Wood Street immediately south of the facility.

The facility is currently subject to Resource Conservation and Recovery Act (RCRA) Corrective Action as a condition of an existing RCRA Permit (EPA ID: NCD 003 162 542) as issued by the NCDEQ Division of Waste Management (DWM). As a condition of the permit, the facility is required to identify Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), assess the units for potential/confirmed releases, and provide remedies for those units where releases are identified and in need of corrective measures. To date, multiple investigations and interim measures have been completed across the facility. The RCRA Facility Investigation report identified groundwater in three areas of the facility as needing further actions. These areas were: groundwater at the Alcoa/Badin Landfill (SWMU

No. 2); groundwater at the Old Brick Landfill (SWMU No. 3); and groundwater at the Main Plant. More recently, the SIR for the Alcoa/Badin Landfill identified questions warranting further investigation and constituted a majority of the comments provided in the NCDEQ correspondence dated January 23, 2017.

The facility is additionally subject to an existing National Pollutant Discharge Elimination System (NPDES) permit (NC0004308) as issued by the NCDEQ Division of Water Quality (DWQ). On September 29, 2017, the DWQ issued a permit renewal for the facility which included a request for an instream monitoring study of Little Mountain Creek. To satisfy the both NCDEQ requests, the April 2, 2018 Work Plan outlined activities to meet NCDEQ DWM and DWQ objectives.

1.2 Scope of Work

In order to satisfy the objectives concerning the Alcoa/Badin Landfill and surrounding area, the scope of work was divided into four subtasks.

- Subtask 1 – Surface Water Assessment: To determine the contribution of cyanide and fluoride compounds from the eastern drainage ditch to Little Mountain Creek and examine the potential source of the polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) in and adjacent to the eastern drainage ditch, sediment and surface water samples were collected from the Eastern Drainage Ditch. To assess the variation on constituent levels in Little Mountain Creek as intended by the instream monitoring study requirements of the September 29, 2017 Final NPDES Permit Renewal, Condition A. (8.), sediment and surface water samples were collected from Little Mountain Creek.

- Subtask 2 – Hydrological Conditions Evaluation: To address the objective of assessing the contribution of groundwater discharge to the eastern drainage ditch and evaluating the effects of the new trench collection system on the site-wide flow system and the constituent concentrations observed within the landfill interstitial pore water, the shallow groundwater unit, and the groundwater south of the landfill, an analysis of current hydrological conditions will be accomplished through monitoring water levels and constituent concentrations in several groundwater monitoring wells and piezometers. The scope of work for the Hydrological Conditions Evaluation subtask is currently in progress.

- Subtask 3 – Geophysical Baseline Establishment: To address the objective of delineating the linear extent of elevated constituent levels in the wetland area downgradient of the Alcoa/Badin Landfill and monitor the effectiveness of the new trench collection system over an extended period of time, baseline conditions will be established by conducting quarterly geophysical surveys for a period of one year. The scope of work for the Geophysical Baseline Establishment subtask is currently in progress.

- Subtask 4 – Jurisdictional Determination: To address the objective of determine the current jurisdictional status of the three drainage ditches (eastern, middle, and western) and adjacent areas, a stream and wetland delineation will be conducted to classify conditions at the base of the Alcoa/Badin Landfill. A Request for Preliminary Jurisdictional Determination summarizing the

findings of the delineation will be prepared for submission to the USACE. The scope of work for the Jurisdictional Determination subtask is currently in progress.

Results from the completed Subtask 1, Surface Water Assessment are detailed below. Results from the Subtasks 2 through 4 will be submitted after completion of each respective subtask scope of work.

2.0 SAMPLING RESULTS

To complete the Subtask 1 objectives concerning the Alcoa/Badin Landfill and surrounding area, surface water and sediment samples were collected from the Little Mountain Creek and the Eastern Drainage Ditch. Surface soil sample and sediment sample locations are presented on Figure 2-1. Sample collection, shipment, and decontamination followed procedures outlined in the April 2, 2018 Work Plan. Laboratory reports and completed chain of custody forms are provided in Appendix A.

2.1 Little Mountain Creek Sediment Samples

To address the objective of assessing Little Mountain Creek sediments for constituents in excess of screening levels, two sediment samples (ABL-SD007-F005 and ABL-SD008-F005) and one duplicate sediment sample (ABL-SD007-D005) were collected from the sediment in Little Mountain Creek. Laboratory analytical results were compared against their respective EPA Freshwater Sediment Ecological Screening Value (ESV) values as obtained from the Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update. Sediment sample analytical results are summarized in Tables 2-1 and 2-2.

2.1.1 Polycyclic Aromatic Hydrocarbons

Concentrations of PAHs were below the applicable EPA ESV values in all three samples. PAHs were detected in only one of the three samples (ABL-SD007-D005) but not the duplicate sample (ABL-SD007-F005).

2.1.2 Polychlorinated Biphenyls

PCB Aroclors were not detected in any of the samples at concentrations above laboratory detection limits. The sum of the detected PCB congener concentrations were below EPA ESV values in all three samples. PCB congeners were detected at concentrations above laboratory detection limits in one of the three samples (ABL-SD007-F005) but not the duplicate sample (ABL-SD007-D005).

2.2 Little Mountain Creek Surface Water Samples

To address the objective of assessing the potential for constituents in excess of water quality standards in Little Mountain Creek, five surface water samples (ABL-SW008-F005 through ABL-SW012-F005) and one duplicate surface water sample (ABL-SW008-D005) were collected from Little Mountain Creek. Laboratory analytical results were compared against their respective NCDEQ 15A North Carolina Administrative Code (NCAC) 2B Water Quality Standards for Surface Waters applicable to Freshwater Water Supply Classifications (WS-I to WS-V). Little Mountain Creek is currently classified by the State of North Carolina as Water Supply IV (WS-IV). Water Supply IV waters are also protected for Class C uses. Surface water sample analytical results are summarized in Tables 2-3 through 2-5.

2.2.1 General Chemistry

Laboratory analytical results indicated pH ranged from 7.04 to 7.55 and were within the applicable 15A NCAC 2B range. Hardness was found to be ranging from 36.0 to 39.2 mg/l in all the samples, below the 15A NCAC2B standard of 100 mg/l.

2.2.2 Fluoride and Cyanide

Fluoride concentrations were below applicable 15A NCAC 2B standards in all samples. The concentrations were reported as estimated, or "J" flagged annotation, which means the result is less than the reporting limit but greater than or equal to the method detection limit, and the concentration is approximated. Concentrations of fluoride detected at the upstream location (ABL-SW012-F005 at 0.082J) were similar to concentrations detected at the downstream location (ABL-SW008-F005 at 0.088J and ABL-SW008-D005 at 0.087J).

Total cyanide was not detected in any of the samples at concentrations above laboratory detection limits.

2.2.3 Polychlorinated Biphenyls

PCB Aroclors were not detected in any of the samples at concentrations above laboratory detection limits. The sum of the detected PCB congeners concentrations was reported above the 15A NCAC 2B criteria of one part per trillion (ppt) in one location (ABL-SW008-F005); however, congeners were not detected in the duplicate sample (ABL-SW008-F005).

2.2.4 Lead and Arsenic

Arsenic was not detected above the laboratory detection limit in any of the samples. Concentrations of lead were reported below the applicable 15A NCAC 2B criteria in all the samples. Lead was reported as estimated, or "J" flagged annotation, in one of the five samples (ABL-SW008-F005) but was not detected in the duplicate sample (ABL-SW008-D005).

2.2.5 Priority Pollutant Analysis

To satisfy additional requirements of the NCDEQ DWR, three additional surface water samples were collected from Little Mountain Creek and analyzed for the presence of the 40 Code of Federal Regulations (CFR) 423 Appendix A Priority Pollutants. Volatile organic compounds, metals, phenols, cyanide, pesticides, PCBs, and dioxins were not detected in any of the samples at concentrations above the method detection limits.

Semi-volatile Priority Pollutant organic compounds were reported below the applicable 15A NCAC 2B standards for the individual analytes; however, two samples (ABL-SW008-F005 and its duplicate ABL-SW008-D005) contained concentrations of total PAHs, a subset of the semi-volatile Priority Pollutant organic compound list, exceeding 15A NCAC 2B standards. Total PAHs is derived from a sum of detections for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

2.3 Eastern Drainage Ditch Sediment Samples

To address the objective of assessing the Eastern Drainage Ditch sediments for constituents in excess of screening levels, three sediment samples (ABL-SD010-F005 through ABL-SD012-F005) were collected from the sediment in the upper, middle, and lower sections of the Eastern Drainage Ditch. Laboratory analytical results were compared against their respective EPA Freshwater Sediment ESV values as obtained from the Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update. Sediment sample analytical results are summarized in Tables 2-6 and 2-7.

2.3.1 Polycyclic Aromatic Hydrocarbons

Concentrations of acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, phenanthrene, pyrene, total high molecular weight PAHs, and total PAHs exceeded the applicable EPA ESV values in one (ABL-SD011-D005, i.e., middle location) of the three samples. No other PAHs were detected above EPA ESV values.

2.3.2 Polychlorinated Biphenyls

PCB Aroclors were not detected in any of the samples at concentrations above laboratory detection limits. PCB congeners were detected in all three sample locations. At the upper ditch location (ABL-SD012-F005, i.e., nearest the Alcoa/Badin Landfill), the sum of the congener concentrations was below both the non-wildlife and wildlife EPA ESV values. The sum of PCB congeners detected in middle ditch location (ABL-SD011-F005) was above both the non-wildlife and wildlife EPA ESV values. The sum of PCB congeners detected in the lower ditch location (ABL-SD010-F005) was below the EPA non-wildlife ESV value, but above the EPA wildlife ESV value.

2.4 Eastern Drainage Ditch Surface Water Samples

To address the objective of assessing Eastern Drainage Ditch surface water for constituents in excess of water quality standards, three surface water samples (ABL-SW013-F005 through ABL-SW015-F005) were collected from the surface water in the Eastern Drainage Ditch. The Eastern Drainage Ditch is believed to be a man-made drainage structure and currently not assigned a surface water classification by the State of North Carolina. For the purposes of evaluation, analytical results were compared against their respective NCDEQ 15A NCAC 2B Water Quality Standards for Surface Waters applicable to Class C waters. Surface water sample analytical results are summarized in Tables 2-8 and 2-9.

2.4.1 Fluoride and Cyanide

Laboratory analytical results indicated concentrations of fluoride in two of the three samples at concentrations above the 15A NCAC 2B standards, however the downstream sample and the sample closest to Little Mountain Creek (ABL-SW013-F005) was below the 15A NCAC 2B standard.

Total cyanide was detected in all three samples at concentrations above the 15A NCAC 2B standard. The three samples were additionally analyzed by method OIA 1677-09 for available cyanide, which includes

free cyanide and easily dissociated forms. Concentrations of available cyanide were below the EPA's National Recommended Water Quality Criteria chronic value for free cyanide.

2.4.2 Polycyclic Aromatic Hydrocarbons

PAHs were not detected in any of the samples at concentrations above laboratory detection limits.

2.4.3 Polychlorinated Biphenyls

PCB Aroclors were not detected in any of the samples at concentrations above laboratory detection limits.

The sums of the detected PCB congener concentrations were reported above the 15A NCAC 2B Surface Water Standard for total PCBs in all three samples. The total PCB concentrations was lowest at the upper ditch sampling location (i.e., closest to the Alcoa/Badin Landfill) and greatest at the lower ditch sampling location (i.e., closest to Little Mountain Creek).

2.5 Field Blanks

One equipment blank was analyzed as part of this project. The equipment blank was prepared by running analyte free distilled water across sample collection equipment (trowel and bowl) after decontamination and placing it in the appropriate sample containers for analysis. Results are summarized in Tables 2-10 and 2-11. No concentrations of any constituents were detected above laboratory detection limits.

One trip blank was analyzed as part of this project. The trip blank was prepared by the laboratory and placed in the cooler containing samples selected for VOC analysis. Results are summarized in Table 2-12. No concentrations of any constituents were detected above laboratory detection limits.

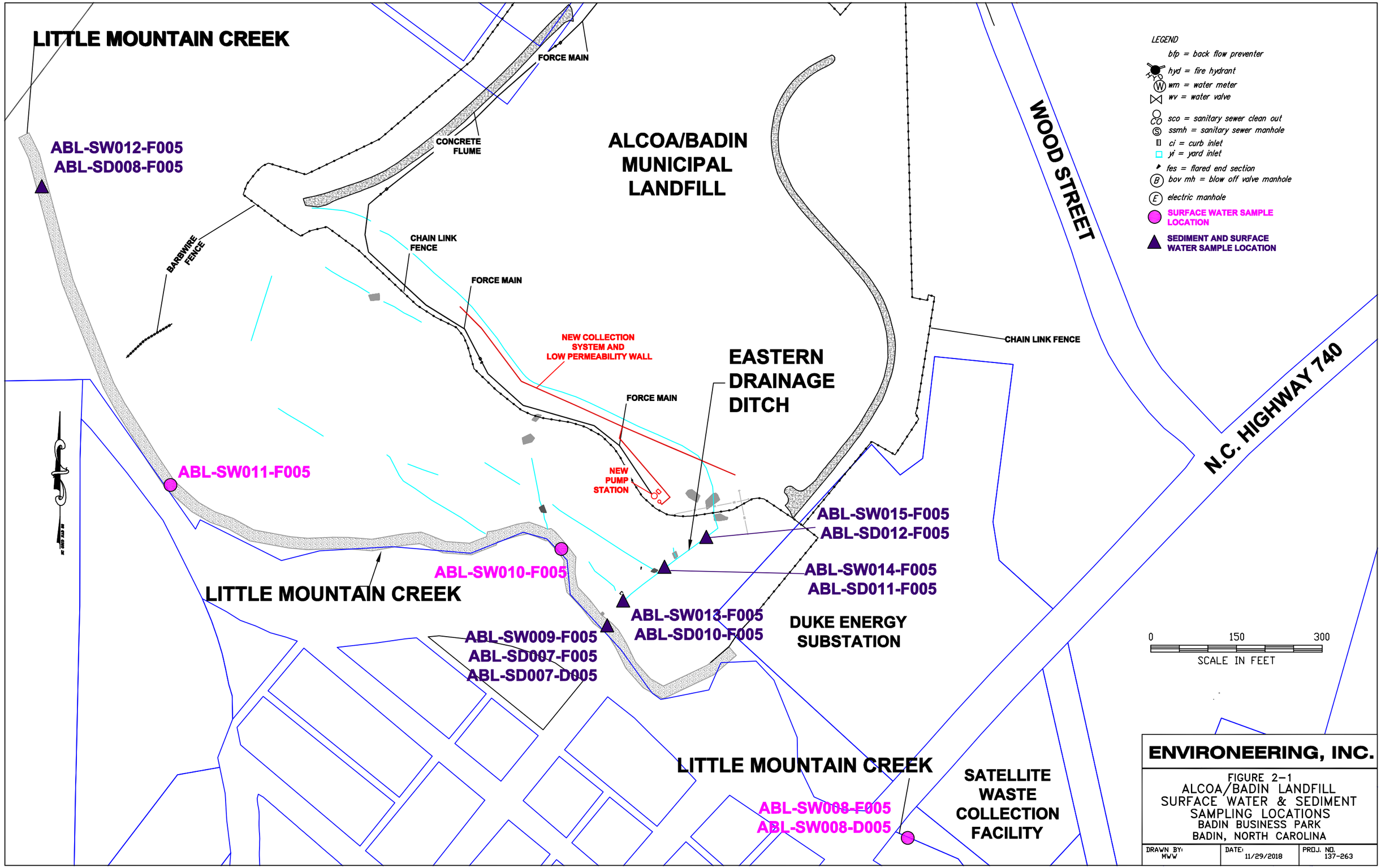
LITTLE MOUNTAIN CREEK
ABL-SW012-F005
ABL-SD008-F005
FORCE MAIN
CONCRETE FLUME
ALCOA/BADIN MUNICIPAL LANDFILL
WOOD STREET
LEGEND
bfp = back flow preventer
hyd = fire hydrant
wm = water meter
wv = water valve
sco = sanitary sewer clean out
ssmh = sanitary sewer manhole
ci = curb inlet
yi = yard inlet
fes = flared end section
bov mh = blow off valve manhole
electric manhole
SURFACE WATER SAMPLE LOCATION
SEDIMENT AND SURFACE WATER SAMPLE LOCATION
BARBWIRE FENCE
CHAIN LINK FENCE
FORCE MAIN
NEW COLLECTION SYSTEM AND LOW PERMEABILITY WALL
EASTERN DRAINAGE DITCH
CHAIN LINK FENCE
N.C. HIGHWAY 740
FORCE MAIN
NEW PUMP STATION
ABL-SW011-F005
ABL-SW015-F005
ABL-SD012-F005
ABL-SW014-F005
ABL-SD011-F005
ABL-SW010-F005
LITTLE MOUNTAIN CREEK
ABL-SW013-F005
ABL-SD010-F005
DUKE ENERGY SUBSTATION
ABL-SW009-F005
ABL-SD007-F005
ABL-SD007-D005
0
150
300
SCALE IN FEET
LITTLE MOUNTAIN CREEK
SATELLITE WASTE COLLECTION FACILITY
ABL-SW008-F005
ABL-SW008-D005
ENVIRONEERING, INC.
FIGURE 2-1
ALCOA/BADIN LANDFILL
SURFACE WATER & SEDIMENT
SAMPLING LOCATIONS
BADIN BUSINESS PARK
BADIN, NORTH CAROLINA
DRAWN BY: MWW
DATE: 11/29/2018
PROJ. NO. 137-263

Table 2-1
Little Mountain Creek Sediment Sample Analytical Results
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-SD007-F005	ABL-SD007-D005	ABL-SD008-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location				**Downstream LMC**	**Downstream LMC**	**Upstream LMC**	
Depth				**Surface**	**Surface**	**Surface**	
Date				**7/12/2018**	**7/12/2018**	**7/12/2018**	
Time				**8:35**	**8:40**	**12:30**	
Percent Moisture	**ASTM D2974-87**		*%*	11.2	9.1	22.6	
PCB-1016 (Aroclor 1016)	**EPA 8082**	**12674-11-2**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1221 (Aroclor 1221)	**EPA 8082**	**11104-28-2**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1232 (Aroclor 1232)	**EPA 8082**	**11141-16-5**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1242 (Aroclor 1242)	**EPA 8082**	**53469-21-9**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1248 (Aroclor 1248)	**EPA 8082**	**12672-29-6**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1254 (Aroclor 1254)	**EPA 8082**	**11097-69-1**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
PCB-1260 (Aroclor 1260)	**EPA 8082**	**11096-82-5**	*mg/kg*	ND $_{0.0172}$	ND $_{0.0167}$	ND $_{0.0191}$	**NE**
Total Polychlorinated Biphenyls		**1336-36-3**	*mg/kg*	ND	ND	ND	**0.0598**
1-Methylnaphthalene	**EPA 8270**	**90-12-0**	*mg/kg*	ND $_{0.0014}$	ND $_{0.0013}$	ND $_{0.0016}$	**0.141**
2-Methylnaphthalene	**EPA 8270**	**91-57-6**	*mg/kg*	ND $_{0.0012}$	ND $_{0.0012}$	ND $_{0.0014}$	**0.0202**
Acenaphthene	**EPA 8270**	**83-32-9**	*mg/kg*	ND $_{0.0017}$	0.0028 J	ND $_{0.0020}$	**0.0067**
Acenaphthylene	**EPA 8270**	**208-96-8**	*mg/kg*	ND $_{0.0015}$	ND $_{0.0014}$	ND $_{0.0017}$	**0.0059**
Anthracene	**EPA 8270**	**120-12-7**	*mg/kg*	ND $_{0.0016}$	0.0060 J	ND $_{0.0018}$	**0.057**
Benzo(a)anthracene	**EPA 8270**	**56-55-3**	*mg/kg*	ND $_{0.00080}$	0.0280	ND $_{0.00093}$	**0.108**
Benzo(a)pyrene	**EPA 8270**	**50-32-8**	*mg/kg*	ND $_{0.0012}$	0.0322	ND $_{0.0014}$	**0.15**
Benzo(b)fluoranthene	**EPA 8270**	**205-99-2**	*mg/kg*	ND $_{0.00076}$	0.0422	ND $_{0.00088}$	**0.19**
Benzo(g,h,i)perylene	**EPA 8270**	**191-24-2**	*mg/kg*	ND $_{0.0029}$	0.0161	ND $_{0.0034}$	**0.17**
Benzo(k)fluoranthene	**EPA 8270**	**207-08-9**	*mg/kg*	ND $_{0.0017}$	0.0149	ND $_{0.0020}$	**0.24**
Chrysene	**EPA 8270**	**218-01-9**	*mg/kg*	ND $_{0.0020}$	0.0276	ND $_{0.0024}$	**0.166**
Dibenz(a,h)anthracene	**EPA 8270**	**53-70-3**	*mg/kg*	ND $_{0.0020}$	0.0047 J	ND $_{0.0024}$	**0.033**
Fluoranthene	**EPA 8270**	**206-44-0**	*mg/kg*	ND $_{0.00094}$	0.0433	ND $_{0.0011}$	**0.423**
Fluorene	**EPA 8270**	**86-73-7**	*mg/kg*	ND $_{0.0018}$	0.0021 J	ND $_{0.0021}$	**0.077**
Indeno(1,2,3-cd)pyrene	**EPA 8270**	**193-39-5**	*mg/kg*	ND $_{0.0032}$	0.0148	ND $_{0.0037}$	**0.2**
Naphthalene	**EPA 8270**	**91-20-3**	*mg/kg*	ND $_{0.0026}$	ND $_{0.0025}$	ND $_{0.0030}$	**0.176**
Phenanthrene	**EPA 8270**	**85-01-8**	*mg/kg*	ND $_{0.0017}$	0.0241	ND $_{0.0020}$	**0.204**
Pyrene	**EPA 8270**	**129-00-0**	*mg/kg*	ND $_{0.0020}$	0.0378	ND $_{0.0024}$	**0.195**
Total Low Molecular Weight PAHs				ND	0.035	ND	**0.6**
Total High Molecular Weight PAHs				ND	0.2857	ND	**1**
Total Polycyclic Aromatic Hydrocarbons				ND	0.2966	ND	**1.61**

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific MDL in mg/kg.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
ESV derived from Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update
NE - Not established.

Table 2-2
Little Mountain Creek Sediment Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SD007-F005	ABL-SD07-D005	ABL-SD008-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location						Downstream LMC	Downstream LMC	Upstream LMC	
Depth						Surface	Surface	Surface	
Date						7/12/2018	7/12/2018	7/12/2018	
Time						8:35	8:40	12:30	
2-MoCB	1	2-Chlorobiphenyl	EPA 1668A	2051-60-7	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3-MoCB	2	3-Chlorobiphenyl	EPA 1668A	2051-61-8	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
4-MoCB	3	4-Chlorobiphenyl	EPA 1668A	2051-62-9	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,2'-DiCB	4	2,2'-Dichlorobiphenyl	EPA 1668A	13029-08-8	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,6-DiCB	10	2,6-Dichlorobiphenyl	EPA 1668A	33146-45-1	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,5-DiCB	9	2,5-Dichlorobiphenyl	EPA 1668A	34883-39-1	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,4-DiCB	7	2,4-Dichlorobiphenyl	EPA 1668A	33284-50-3	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,3'-DiCB	6	2,3'-Dichlorobiphenyl	EPA 1668A	25569-80-6	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,3-DiCB	5	2,3-Dichlorobiphenyl	EPA 1668A	16605-91-7	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,4'-DiCB	8	2,4'-Dichlorobiphenyl	EPA 1668A	34883-43-7	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,5-DiCB	14	3,5-Dichlorobiphenyl	EPA 1668A	34883-41-5	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,3'-DiCB	11	3,3'-Dichlorobiphenyl	EPA 1668A	2050-67-1	mg/kg	ND 0.000238	ND 0.000245	ND 0.000238	NE
(12/13)	12/13	NA (Co-elution)	EPA 1668A	E52450566	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
4,4'-DiCB	15	4,4'-Dichlorobiphenyl	EPA 1668A	2050-68-2	mg/kg	ND 0.000032	ND 0.000033	ND 0.0000321	NE
2,2',6-TrCB	19	2,2',6-Trichlorobiphenyl	EPA 1668A	38444-73-4	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
(18/30)	18/30	NA (Co-elution)	EPA 1668A	E52450574	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',4-TrCB	17	2,2',4-Trichlorobiphenyl	EPA 1668A	37680-66-3	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,3',6-TrCB	27	2,3',6-Trichlorobiphenyl	EPA 1668A	38444-76-7	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,3,6-TrCB	24	2,3,6-Trichlorobiphenyl	EPA 1668A	55702-45-9	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,2',3-TrCB	16	2,2',3-Trichlorobiphenyl	EPA 1668A	38444-78-9	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,4',6-TrCB	32	2,4',6-Trichlorobiphenyl	EPA 1668A	38444-77-8	mg/kg	0.0000257	ND 0.000025	ND 0.0000243	NE
2,3',5'-TrCB	34	2,3',5'-Trichlorobiphenyl	EPA 1668A	37680-68-5	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,3,5-TrCB	23	2,3,5-Trichlorobiphenyl	EPA 1668A	55720-44-0	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
(26/29)	26/29	NA (Co-elution)	EPA 1668A	E52450608	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4-TrCB	25	2,3',4-Trichlorobiphenyl	EPA 1668A	55712-37-3	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
2,4',5-TrCB	31	2,4',5-Trichlorobiphenyl	EPA 1668A	16606-02-3	mg/kg	0.00018	ND 0.00013	ND 0.000126	NE
(20/28)	20/28	NA (Co-elution)	EPA 1668A	E52450582	mg/kg	0.000165	ND 0.000129	ND 0.000125	NE
(21/33)	21/33	NA (Co-elution)	EPA 1668A	E52450590	mg/kg	ND 0.000131	ND 0.000135	ND 0.000131	NE
2,3,4'-TrCB	22	2,3,4'-Trichlorobiphenyl	EPA 1668A	38444-85-8	mg/kg	ND 0.0000922	ND 0.000095	ND 0.0000923	NE
3,3',5-TrCB	36	3,3',5-Trichlorobiphenyl	EPA 1668A	38444-87-0	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,4',5-TrCB	39	3,4',5-Trichlorobiphenyl	EPA 1668A	38444-88-1	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,4,5-TrCB	38	3,4,5-Trichlorobiphenyl	EPA 1668A	53555-66-1	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,3',4-TrCB	35	3,3',4-Trichlorobiphenyl	EPA 1668A	37680-69-6	mg/kg	ND 0.0000243	ND 0.000025	ND 0.0000243	NE
3,4,4'-TrCB	37	3,4,4'-Trichlorobiphenyl	EPA 1668A	38444-90-5	mg/kg	0.0000818	ND 0.000053	ND 0.0000515	NE
2,2',6,6'-TeCB	54	2,2',6,6'-Tetrachlorobiphenyl	EPA 1668A	15968-05-5	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(50/53)	50/53	NA (Co-elution)	EPA 1668A	E52450657	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
(45/51)	45/51	NA (Co-elution)	EPA 1668A	E52450632	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
2,2',3,6'-TeCB	46	2,2',3,6'-Tetrachlorobiphenyl	EPA 1668A	41464-47-5	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',5,5'-TeCB	52	2,2',5,5'-Tetrachlorobiphenyl	EPA 1668A	35693-99-3	mg/kg	0.000249	ND 0.000154	ND 0.00015	NE
2,3',5',6-TeCB	73	2,3',5',6-Tetrachlorobiphenyl	EPA 1668A	74338-23-1	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
43/73	43/73	NA (Co-elution)	EPA 1668A		mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(49/69)	49/69	NA (Co-elution)	EPA 1668A	E52450640	mg/kg	0.000161	ND 0.0001	ND 0.0000971	NE
2,2',4,5-TeCB	48	2,2',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-47-9	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(44/47/65)	44/47/65	NA (Co-elution)	EPA 1668A	E52450624	mg/kg	0.000215	ND 0.00015	ND 0.000146	NE
(59/62/75)	59/62/75	NA (Co-elution)	EPA 1668A	E52450665	mg/kg	ND 0.000146	ND 0.00015	ND 0.000146	NE
2,2',3,4'-TeCB	42	2,2',3,4'-Tetrachlorobiphenyl	EPA 1668A	36559-22-5	mg/kg	0.0000666	ND 0.00005	ND 0.0000486	NE
(40/41/71)	40/41/71	NA (Co-elution)	EPA 1668A	E52450616	mg/kg	ND 0.000146	ND 0.00015	ND 0.000146	NE
2,3,4',6-TeCB	64	2,3,4',6-Tetrachlorobiphenyl	EPA 1668A	52663-58-8	mg/kg	0.00018	ND 0.00005	ND 0.0000486	NE
2,3',5,5'-TeCB	72	2,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	41464-42-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,5'-TeCB	68	2,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	73575-52-7	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',5-TeCB	57	2,3,3',5-Tetrachlorobiphenyl	EPA 1668A	70424-67-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',5'-TeCB	58	2,3,3',5'-Tetrachlorobiphenyl	EPA 1668A	41464-49-7	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,5-TeCB	67	2,3',4,5-Tetrachlorobiphenyl	EPA 1668A	73575-53-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,4',5-TeCB	63	2,3,4',5-Tetrachlorobiphenyl	EPA 1668A	74472-34-7	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(61/70/74/76)	60/70/74/76	NA (Co-elution)	EPA 1668A	E52450673	mg/kg	0.000886	ND 0.0002	ND 0.000194	NE
2,3',4,4'-TeCB	66	2,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-10-0	mg/kg	0.000468	ND 0.000084	ND 0.0000816	NE
2,3,3',4-TeCB	55	2,3,3',4-Tetrachlorobiphenyl	EPA 1668A	74338-24-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',4'-TeCB	56	2,3,3',4'-Tetrachlorobiphenyl	EPA 1668A	41464-43-1	mg/kg	0.000226	ND 0.00005	ND 0.0000486	NE
2,3,4,4'-TeCB	60	2,3,4,4'-Tetrachlorobiphenyl	EPA 1668A	33025-41-1	mg/kg	0.00014	ND 0.00005	ND 0.0000486	NE
3,3',5,5'-TeCB	80	3,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	33284-52-5	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
3,3',4,5'-TeCB	79	3,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	41464-48-6	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
3,3',4,5-TeCB	78	3,3',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-49-1	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
3,4,4',5-TeCB	81	3,4,4',5-Tetrachlorobiphenyl	EPA 1668A	70362-50-4	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
3,3',4,4'-TeCB	77	3,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-13-3	mg/kg	0.000105	ND 0.00005	ND 0.0000486	NE
2,2',4,6,6'-PeCB	104	2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668A	56558-16-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,6,6'-PeCB	96	2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668A	73575-54-9	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',4,5',6-PeCB	103	2,2',4,5',6-Pentachlorobiphenyl	EPA 1668A	60145-21-3	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,5,6'-PeCB	94	2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668A	73575-55-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,5',6-PeCB	95	2,2',3,5',6-Pentachlorobiphenyl	EPA 1668A	38379-99-6	mg/kg	0.000106	ND 0.000095	ND 0.0000923	NE
(93/98/100/102)	93/98/100/102	NA (Co-elution)	EPA 1668A		mg/kg	ND 0.000194	ND 0.0002	ND 0.000194	NE
(88/91)	88/91	NA (Co-elution)	EPA 1668A	E52450715	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
2,2',3,3',6-PeCB	84	2,2',3,3',6-Pentachlorobiphenyl	EPA 1668A	52663-60-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4,6'-PeCB	89	2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668A	73575-57-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,5',6-PeCB	121	2,3',4,5',6-Pentachlorobiphenyl	EPA 1668A	56558-18-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,5,5'-PeCB	92	2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668A	52663-61-3	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(90/101/113)	90/101/113	NA (Co-elution)	EPA 1668A	E52450723	mg/kg	0.000191	ND 0.00015	ND 0.000146	NE
2,2',3,3',5-PeCB	83	2,2',3,3',5-Pentachlorobiphenyl	EPA 1668A	60145-20-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',4,4',5-PeCB	99	2,2',4,4',5-Pentachlorobiphenyl	EPA 1668A	38380-01-7	mg/kg	0.000129	ND 0.00005	ND 0.0000486	NE
2,3,3',5,6-PeCB	112	2,3,3',5,6-Pentachlorobiphenyl	EPA 1668A	74472-36-9	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(86/87/97/108/119/125)	86/87/97/108/119'125	NA (Co-elution)	EPA 1668A	E52450707	mg/kg	ND 0.000291	ND 0.0003	ND 0.000291	NE
(85/117/116)	85/117/116	NA (Co-elution)	EPA 1668A	E52450699	mg/kg	ND 0.000146	ND 0.00015	ND 0.000146	NE
(110/115)	110/115	NA (Co-elution)	EPA 1668A	E52450756	mg/kg	0.000335	ND 0.0001	ND 0.0000971	NE
2,2',3,3',4-PeCB	82	2,2',3,3',4-Pentachlorobiphenyl	EPA 1668A	52663-62-4	mg/kg	0.0000513	ND 0.00005	ND 0.0000486	NE
2,3,3',5,5'-PeCB	111	2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668A	39635-32-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,5,5'-PeCB	120	2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	68194-12-7	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(107/124)	107/124	NA (Co-elution)	EPA 1668A	E52450749	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
2,3,3',4,6-PeCB	109	2,3,3',4,6-Pentachlorobiphenyl	EPA 1668A	74472-35-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,4',5'-PeCB	123	2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668A	65510-44-3	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',4,5-PeCB	106	2,3,3',4,5-Pentachlorobiphenyl	EPA 1668A	70424-69-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3',4,4',5-PeCB	118	2,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	31508-00-6	mg/kg	0.000354	ND 0.000064	ND 0.0000622	NE
2,3,3',4',5'-PeCB	122	2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668A	76842-07-4	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,4,4',5-PeCB	114	2,3,4,4',5-Pentachlorobiphenyl	EPA 1668A	74472-37-0	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',4,4'-PeCB	105	2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668A	32598-14-4	mg/kg	0.000232	ND 0.00005	ND 0.0000486	NE
3,3',4,5,5'-PeCB	127	3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	39635-33-1	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
3,3',4,4',5-PeCB	126	3,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	57465-28-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',4,4',6,6'-HxCB	155	2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668A	33979-03-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,5,6,6'-HxCB	152	2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668A	68194-09-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4',6,6'-HxCB	150	2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668A	68194-08-1	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,3',6,6'-HxCB	136	2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668A	38411-22-2	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4,6,6'-HxCB	145	2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668A	74472-40-5	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4',5,6'-HxCB	148	2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668A	74472-41-6	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(135/151)	135/151	NA (Co-elution)	EPA 1668A		mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
2,2',4,4',5,6'-HxCB	154	2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668A	60145-22-4	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4,5',6-HxCB	144	2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668A	68194-14-9	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(147/149)	147/149	NA (Co-elution)	EPA 1668A	E52450814	mg/kg	0.000161	ND 0.0001	ND 0.0000971	NE
(134/143)	134/143	NA (Co-elution)	EPA 1668A	E52450780	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
(139/140)	139/140	NA (Co-elution)	EPA 1668A	E52450806	mg/kg	ND 0.0000971	ND 0.0001	ND 0.0000971	NE
2,2',3,3',4,6-HxCB	131	2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668A	61798-70-7	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4,5,6-HxCB	142	2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-61-4	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,3',4,6'-HxCB	132	2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668A	38380-05-1	mg/kg	0.0000556	ND 0.00005	ND 0.0000486	NE
2,2',3,3',5,5'-HxCB	133	2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668A	35694-04-3	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',5,5',6-HxCB	165	2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668A	74472-46-1	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,2',3,4',5,5'-HxCB	146	2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	51908-16-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
2,3,3',4,5',6-HxCB	161	2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668A	74472-43-8	mg/kg	ND 0.0000485	ND 0.00005	ND 0.0000486	NE
(153/168)	153/168	NA (Co-elution)	EPA 1668A	E52450822	mg/kg	0.000196	ND 0.0001	ND 0.0000971	NE

Table 2-2
Little Mountain Creek Sediment Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SD007-F005	ABL-SD07-D005	ABL-SD008-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location						**Downstream LMC**	**Downstream LMC**	**Upstream LMC**	
Depth						**Surface**	**Surface**	**Surface**	
Date						**7/12/2018**	**7/12/2018**	**7/12/2018**	
Time						**8:35**	**8:40**	**12:30**	
2,2',3,4,5,5'-HxCB	**141**	**2,2',3,4,5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52712-04-6**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',4,5'-HxCB	**130**	**2,2',3,3',4,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52663-66-8**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4,4',5-HxCB	**137**	**2,2',3,4,4',5-Hexachlorobiphenyl**	**EPA 1668A**	**35694-06-5**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4',5',6-HxCB	**164**	**2,3,3',4',5',6-Hexachlorobiphenyl**	**EPA 1668A**	**74472-45-0**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(129/138/163)	**129/138/163**	**NA (Co-elution)**	**EPA 1668A**		*mg/kg*	0.000249	ND $_{0.00015}$	ND $_{0.000146}$	**NE**
2,3,3',4,5,6-HxCB	**160**	**2,3,3',4,5,6-Hexachlorobiphenyl**	**EPA 1668A**	**41411-62-5**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4,4',6-HxCB	**158**	**2,3,3',4,4',6-Hexachlorobiphenyl**	**EPA 1668A**	**74472-42-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(128/166)	**128/166**	**NA (Co-elution)**	**EPA 1668A**	**E52450764**	*mg/kg*	ND $_{0.0000971}$	ND $_{0.0001}$	ND $_{0.0000971}$	**NE**
2,3,3',4,5,5'-HxCB	**159**	**2,3,3',4,5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**39635-35-3**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4',5,5'-HxCB	**162**	**2,3,3',4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**39635-34-2**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3',4,4',5,5'-HxCB	**167**	**2,3',4,4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52663-72-6**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(156/157)	**156/157**	**NA (Co-elution)**	**EPA 1668A**	**E52450830**	*mg/kg*	ND $_{0.0000971}$	ND $_{0.0001}$	ND $_{0.0000971}$	**NE**
3,3',4,4',5,5'-HxCB	**169**	**3,3',4,4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**32774-16-6**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4',5,6,6'-HpCB	**188**	**2,2',3,4',5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74487-85-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',5,6,6'-HpCB	**179**	**2,2',3,3',5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-64-6**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4,4',6,6'-HpCB	**184**	**2,2',3,4,4',6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74472-48-3**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',4,6,6'-HpCB	**176**	**2,2',3,3',4,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-65-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4,5,6,6'-HpCB	**186**	**2,2',3,4,5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74472-49-4**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',5,5',6-HpCB	**178**	**2,2',3,3',5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**52663-67-9**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',4,5',6-HpCB	**175**	**2,2',3,3',4,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**40186-70-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4',5,5',6-HpCB	**187**	**2,2',3,4',5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**52663-68-0**	*mg/kg*	0.000101	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4,4',5,6'-HpCB	**182**	**2,2',3,4,4',5,6'-Heptachlorobiphenyl**	**EPA 1668A**	**60145-23-5**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(183/185)	**183/185**	**NA (Co-elution)**	**EPA 1668A**	**E52450863**	*mg/kg*	ND $_{0.0000971}$	ND $_{0.0001}$	ND $_{0.0000971}$	**NE**
2,2',3,3',4,5,6'-HpCB	**174**	**2,2',3,3',4,5,6'-Heptachlorobiphenyl**	**EPA 1668A**	**38411-25-5**	*mg/kg*	0.0000822	ND $_{0.0000485}$	ND $_{0.0000486}$	**NE**
2,2',3,3',4,5',6'-HpCB	**177**	**2,2',3,3',4,5',6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-70-4**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,4,4',5,6-HpCB	**181**	**2,2',3,4,4',5,6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-47-2**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(171/173)	**171/173**	**NA (Co-elution)**	**EPA 1668A**	**E52450848**	*mg/kg*	ND $_{0.0000971}$	ND $_{0.0001}$	ND $_{0.0000971}$	**NE**
2,2',3,3',4,5,5'-HpCB	**172**	**2,2',3,3',4,5,5'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-74-8**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4,5,5',6-HpCB	**192**	**2,3,3',4,5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-51-8**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
(180/193)	**180/193**	**NA (Co-elution)**	**EPA 1668A**	**E52450855**	*mg/kg*	0.000165	ND $_{0.0001}$	ND $_{0.0000971}$	**NE**
2,3,3',4,4',5',6-HpCB	**191**	**2,3,3',4,4',5',6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-50-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',4,4',5-HpCB	**170**	**2,2',3,3',4,4',5-Heptachlorobiphenyl**	**EPA 1668A**	**35065-30-6**	*mg/kg*	0.0000649	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4,4',5,6-HpCB	**190**	**2,3,3',4,4',5,6-Heptachlorobiphenyl**	**EPA 1668A**	**41411-64-7**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,3,3',4,4',5,5'-HpCB	**189**	**2,3,3',4,4',5,5'-Heptachlorobiphenyl**	**EPA 1668A**	**39635-31-9**	*mg/kg*	ND $_{0.0000485}$	ND $_{0.00005}$	ND $_{0.0000486}$	**NE**
2,2',3,3',5,5',6,6'-OcCB	**202**	**2,2',3,3',5,5',6,6'-Octachlorobiphenyl**	**EPA 1668A**	**2136-99-4**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,5',6,6'-OcCB	**201**	**2,2',3,3',4,5',6,6'-Octachlorobiphenyl**	**EPA 1668A**	**40186-71-8**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,4,4',5,6,6'-OcCB	**204**	**2,2',3,4,4',5,6,6'-Octachlorobiphenyl**	**EPA 1668A**	**74472-52-9**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
(197/200)	**197/200**	**NA (Co-elution)**	**EPA 1668A**	**E52450871**	*mg/kg*	ND $_{0.000146}$	ND $_{0.00015}$	ND $_{0.000146}$	**NE**
(198/199)	**198/199**	**NA (Co-elution)**	**EPA 1668A**	**E52450889**	*mg/kg*	ND $_{0.000146}$	ND $_{0.00015}$	ND $_{0.000146}$	**NE**
2,2',3,3',4,4',5,6'-OcCB	**196**	**2,2',3,3',4,4',5,6'-Octachlorobiphenyl**	**EPA 1668A**	**42740-50-1**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,4,4',5,5',6-OcCB	**203**	**2,2',3,4,4',5,5',6-Octachlorobiphenyl**	**EPA 1668A**	**52663-76-0**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,4',5,6-OcCB	**195**	**2,2',3,3',4,4',5,6-Octachlorobiphenyl**	**EPA 1668A**	**52663-78-2**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,4',5,5'-OcCB	**194**	**2,2',3,3',4,4',5,5'-Octachlorobiphenyl**	**EPA 1668A**	**35694-08-7**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,3,3',4,4',5,5',6-OcCB	**205**	**2,3,3',4,4',5,5',6-Octachlorobiphenyl**	**EPA 1668A**	**74472-53-0**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,5,5',6,6'-NoCB	**208**	**2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl**	**EPA 1668A**	**52663-77-1**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,4',5,6,6'-NoCB	**207**	**2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl**	**EPA 1668A**	**52663-79-3**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
2,2',3,3',4,4',5,5',6-NoCB	**206**	**2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl**	**EPA 1668A**	**40186-72-9**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
Decachlorobiphenyl	**209**	**Decachlorobiphenyl**	**EPA 1668A**	**2051-24-3**	*mg/kg*	ND $_{0.0000728}$	ND $_{0.000075}$	ND $_{0.0000729}$	**NE**
Total Polychlorinated Biphenyls					*mg/kg*	0.0056221	ND	ND	**0.0598/0.014**

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific Method Specified Reporting Limit (EML) in mg/kg.
ESV derived from Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update include both aquatic and wildlife based values.
NE - Not established.

Table 2-3
Little Mountain Creek Surface Water Sample Analytical Results
Alcoa/Badin Municipal Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-SW008-F005	ABL-SW008-D005	ABL-SW009-F005	ABL-SW010-F005	ABL-SW011-F005	ABL-SW012-F005	15A NCAC 2B Surface Water Standard
Location				**Downstream from NC740**	**Downstream from NC740**	**LMC at Eastern SCA Ditch**	**LMC at Middle SCA Ditch**	**LMC near Western SCA**	**LMC Upstream of the ABL**	
Date				**7/12/2018**	**7/12/2018**	**7/12/2018**	**7/12/2018**	**7/12/2018**	**7/12/2018**	
Time				**7:10**	**7:30**	**8:25**	**8:50**	**9:25**	**9:55**	
pH			*SU*	7.47	7.39	7.42	7.55	7.31	7.04	**6.0-9.0**
Fluoride	**EPA 300.0**	**16984-48-8**	*mg/l*	0.088 J	0.087 J	0.078 J	0.074 J	0.078 J	0.082 J	**1.8**
Cyanide	**EPA 9012B**	**57-12-5**	*mg/l*	ND $_{0.0040}$	ND $_{0.0040}$	ND $_{0.0040}$	ND $_{0.0040}$	ND $_{0.0040}$	ND $_{0.0040}$	**0.005**
PCB-1016 (Aroclor 1016)	**EPA 8082**	**12674-11-2**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1221 (Aroclor 1221)	**EPA 8082**	**11104-28-2**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1232 (Aroclor 1232)	**EPA 8082**	**11141-16-5**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1242 (Aroclor 1242)	**EPA 8082**	**53469-21-9**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1248 (Aroclor 1248)	**EPA 8082**	**12672-29-6**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1254 (Aroclor 1254)	**EPA 8082**	**11097-69-1**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
PCB-1260 (Aroclor 1260)	**EPA 8082**	**11096-82-5**	*mg/l*	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	ND $_{0.00042}$	**NE**
Total Polychlorinated Biphenyls		**1336-36-3**	*mg/l*	ND	ND	ND	ND	ND	ND	**0.000001**
Arsenic	**EPA 200.7**	**7440-38-2**	*mg/l*	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	**0.34**
Hardness, Total (SM 2340B)	**EPA 200.7**		*mg/l*	37.8	38.5	36.6	36.0	37.3	39.2	**100**
Lead	**EPA 200.7**	**7439-92-1**	*mg/l*	0.0026 J	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.0209**

Sample times inadvertently left off laboratory chain of custody. Sample times as recorded on bottles were documented in field book.
ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific MDL in mg/kg.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
NE - Not established.
The 15A NCAC 2B standard for acute lead is calculated as hardness dependent using the a hardness value of 36 mg/l.

Table 2-4
Little Mountain Creek Surface Water Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SW008-F005	ABL-SW008-D005	ABL-SW009-F005	ABL-SW010-F005	ABL-SW011-F005	ABL-SW012-F005	15A NCAC 2B Surface Water Standard
Location						Downstream from NC740	Downstream from NC740	LMC at Eastern SCA Ditch	LMC at Middle SCA Ditch	LMC near Western SCA	LMC Upstream of the ABL	
Date						7/12/2018	7/12/2018	7/12/2018	7/12/2018	7/12/2018	7/12/2018	
Time						7:10	7:30	8:25	8:50	9:25	9:55	
2-MoCB	1	2-Chlorobiphenyl	EPA 1668A	2051-60-7	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3-MoCB	2	3-Chlorobiphenyl	EPA 1668A	2051-61-8	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
4-MoCB	3	4-Chlorobiphenyl	EPA 1668A	2051-62-9	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,2'-DiCB	4	2,2'-Dichlorobiphenyl	EPA 1668A	13029-08-8	mg/l	0.000000357	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,6-DiCB	10	2,6-Dichlorobiphenyl	EPA 1668A	33146-45-1	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,5-DiCB	9	2,5-Dichlorobiphenyl	EPA 1668A	34883-39-1	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,4-DiCB	7	2,4-Dichlorobiphenyl	EPA 1668A	33284-50-3	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3'-DiCB	6	2,3'-Dichlorobiphenyl	EPA 1668A	25569-80-6	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3-DiCB	5	2,3-Dichlorobiphenyl	EPA 1668A	16605-91-7	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,4'-DiCB	8	2,4'-Dichlorobiphenyl	EPA 1668A	34883-43-7	mg/l	0.000000331	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,5-DiCB	14	3,5-Dichlorobiphenyl	EPA 1668A	34883-41-5	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,3'-DiCB	11	3,3'-Dichlorobiphenyl	EPA 1668A	2050-67-1	mg/l	ND 0.00000266	ND 0.0000026	ND 0.00000248	ND 0.00000254	ND 0.00000275	ND 0.00000252	NE
(12/13)	12/13	NA (Co-elution)	EPA 1668A	E52450566	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
4,4'-DiCB	15	4,4'-Dichlorobiphenyl	EPA 1668A	2050-68-2	mg/l	0.000000959	ND 0.000000351	ND 0.000000334	ND 0.000000342	ND 0.000000371	ND 0.00000034	NE
2,2',6-TrCB	19	2,2',6-Trichlorobiphenyl	EPA 1668A	38444-73-4	mg/l	0.000000289	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
(18/30)	18/30	NA (Co-elution)	EPA 1668A	E52450574	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',4-TrCB	17	2,2',4-Trichlorobiphenyl	EPA 1668A	37680-66-3	mg/l	0.000000694	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3',6-TrCB	27	2,3',6-Trichlorobiphenyl	EPA 1668A	38444-76-7	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3,6-TrCB	24	2,3,6-Trichlorobiphenyl	EPA 1668A	55702-45-9	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,2',3-TrCB	16	2,2',3-Trichlorobiphenyl	EPA 1668A	38444-78-9	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,4',6-TrCB	32	2,4',6-Trichlorobiphenyl	EPA 1668A	38444-77-8	mg/l	0.000000519	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3',5'-TrCB	34	2,3',5'-Trichlorobiphenyl	EPA 1668A	37680-68-5	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,3,5-TrCB	23	2,3,5-Trichlorobiphenyl	EPA 1668A	55720-44-0	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
(26/29)	26/29	NA (Co-elution)	EPA 1668A	E52450608	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4-TrCB	25	2,3',4-Trichlorobiphenyl	EPA 1668A	55712-37-3	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
2,4',5-TrCB	31	2,4',5-Trichlorobiphenyl	EPA 1668A	16606-02-3	mg/l	ND 0.00000141	ND 0.00000138	ND 0.00000132	ND 0.00000135	ND 0.00000146	ND 0.00000134	NE
(20/28)	20/28	NA (Co-elution)	EPA 1668A	E52450582	mg/l	0.00000143	ND 0.00000137	ND 0.00000131	ND 0.00000134	ND 0.00000145	ND 0.00000133	NE
(21/33)	21/33	NA (Co-elution)	EPA 1668A	E52450590	mg/l	ND 0.00000147	ND 0.00000143	ND 0.00000137	ND 0.0000014	ND 0.00000152	ND 0.00000139	NE
2,3,4'-TrCB	22	2,3,4'-Trichlorobiphenyl	EPA 1668A	38444-85-8	mg/l	ND 0.00000103	ND 0.00000101	ND 0.000000962	ND 0.000000983	ND 0.00000107	ND 0.000000978	NE
3,3',5-TrCB	36	3,3',5-Trichlorobiphenyl	EPA 1668A	38444-87-0	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,4',5-TrCB	39	3,4',5-Trichlorobiphenyl	EPA 1668A	38444-88-1	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,4,5-TrCB	38	3,4,5-Trichlorobiphenyl	EPA 1668A	53555-66-1	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,3',4-TrCB	35	3,3',4-Trichlorobiphenyl	EPA 1668A	37680-69-6	mg/l	ND 0.000000271	ND 0.000000266	ND 0.000000253	ND 0.000000259	ND 0.000000281	ND 0.000000257	NE
3,4,4'-TrCB	37	3,4,4'-Trichlorobiphenyl	EPA 1668A	38444-90-5	mg/l	ND 0.000000575	ND 0.000000563	ND 0.000000537	ND 0.000000549	ND 0.000000595	ND 0.000000545	NE
2,2',6,6'-TeCB	54	2,2',6,6'-Tetrachlorobiphenyl	EPA 1668A	15968-05-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(50/53)	50/53	NA (Co-elution)	EPA 1668A	E52450657	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
(45/51)	45/51	NA (Co-elution)	EPA 1668A	E52450632	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,6'-TeCB	46	2,2',3,6'-Tetrachlorobiphenyl	EPA 1668A	41464-47-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',5,5'-TeCB	52	2,2',5,5'-Tetrachlorobiphenyl	EPA 1668A	35693-99-3	mg/l	0.00000221	ND 0.00000164	ND 0.00000156	ND 0.00000159	ND 0.00000173	ND 0.00000158	NE
2,3',5',6-TeCB	73	2,3',5',6-Tetrachlorobiphenyl	EPA 1668A	74338-23-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
43/73	43/73	NA (Co-elution)	EPA 1668A		mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(49/69)	49/69	NA (Co-elution)	EPA 1668A	E52450640	mg/l	0.00000177	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',4,5-TeCB	48	2,2',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-47-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(44/47/65)	44/47/65	NA (Co-elution)	EPA 1668A	E52450624	mg/l	0.00000292	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
(59/62/75)	59/62/75	NA (Co-elution)	EPA 1668A	E52450665	mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
2,2',3,4'-TeCB	42	2,2',3,4'-Tetrachlorobiphenyl	EPA 1668A	36559-22-5	mg/l	0.000000615	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(40/41/71)	40/41/71	NA (Co-elution)	EPA 1668A	E52450616	mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
2,3,4',6-TeCB	64	2,3,4',6-Tetrachlorobiphenyl	EPA 1668A	52663-58-8	mg/l	0.00000106	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',5,5'-TeCB	72	2,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	41464-42-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,5'-TeCB	68	2,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	73575-52-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',5-TeCB	57	2,3,3',5-Tetrachlorobiphenyl	EPA 1668A	70424-67-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',5'-TeCB	58	2,3,3',5'-Tetrachlorobiphenyl	EPA 1668A	41464-49-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,5-TeCB	67	2,3',4,5-Tetrachlorobiphenyl	EPA 1668A	73575-53-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,4',5-TeCB	63	2,3,4',5-Tetrachlorobiphenyl	EPA 1668A	74472-34-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(61/70/74/76)	60/70/74/76	NA (Co-elution)	EPA 1668A	E52450673	mg/l	0.00000379	ND 0.00000213	ND 0.00000203	ND 0.00000207	ND 0.00000225	ND 0.00000206	NE
2,3',4,4'-TeCB	66	2,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-10-0	mg/l	0.00000319	ND 0.000000893	ND 0.000000851	ND 0.000000869	ND 0.000000944	ND 0.000000864	NE
2,3,3',4-TeCB	55	2,3,3',4-Tetrachlorobiphenyl	EPA 1668A	74338-24-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4'-TeCB	56	2,3,3',4'-Tetrachlorobiphenyl	EPA 1668A	41464-43-1	mg/l	0.00000127	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,4,4'-TeCB	60	2,3,4,4'-Tetrachlorobiphenyl	EPA 1668A	33025-41-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',5,5'-TeCB	80	3,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	33284-52-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',4,5'-TeCB	79	3,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	41464-48-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',4,5-TeCB	78	3,3',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-49-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,4,4',5-TeCB	81	3,4,4',5-Tetrachlorobiphenyl	EPA 1668A	70362-50-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',4,4'-TeCB	77	3,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-13-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',4,6,6'-PeCB	104	2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668A	56558-16-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,6,6'-PeCB	96	2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668A	73575-54-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',4,5',6-PeCB	103	2,2',4,5',6-Pentachlorobiphenyl	EPA 1668A	60145-21-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,5',6-PeCB	94	2,2',3,5',6-Pentachlorobiphenyl	EPA 1668A	73575-55-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,5,6'-PeCB	95	2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668A	38379-99-6	mg/l	0.00000125	ND 0.00000101	ND 0.000000962	ND 0.000000983	ND 0.00000107	ND 0.000000978	NE
(93/98/100/102)	93/98/100/102	NA (Co-elution)	EPA 1668A		mg/l	ND 0.00000217	ND 0.00000213	ND 0.00000203	ND 0.00000207	ND 0.00000225	ND 0.00000206	NE
(88/91)	88/91	NA (Co-elution)	EPA 1668A	E52450715	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,3',6-PeCB	84	2,2',3,3',6-Pentachlorobiphenyl	EPA 1668A	52663-60-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,6'-PeCB	89	2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668A	73575-57-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,5',6-PeCB	121	2,3',4,5',6-Pentachlorobiphenyl	EPA 1668A	56558-18-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,5,5'-PeCB	92	2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668A	52663-61-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(90/101/113)	90/101/113	NA (Co-elution)	EPA 1668A	E52450723	mg/l	0.00000174	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
2,2',3,3',5-PeCB	83	2,2',3,3',5-Pentachlorobiphenyl	EPA 1668A	60145-20-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',4,4',5-PeCB	99	2,2',4,4',5-Pentachlorobiphenyl	EPA 1668A	38380-01-7	mg/l	0.00000139	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',5,6-PeCB	112	2,3,3',5,6-Pentachlorobiphenyl	EPA 1668A	74472-36-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(86/87/97/108/119/125)	86/87/97/108/119'125	NA (Co-elution)	EPA 1668A	E52450707	mg/l	ND 0.00000326	ND 0.00000319	ND 0.00000304	ND 0.00000311	ND 0.00000337	ND 0.00000309	NE
(85/117/116)	85/117/116	NA (Co-elution)	EPA 1668A	E52450699	mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
(110/115)	110/115	NA (Co-elution)	EPA 1668A	E52450756	mg/l	0.00000234	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,3',4-PeCB	82	2,2',3,3',4-Pentachlorobiphenyl	EPA 1668A	52663-62-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',5,5'-PeCB	111	2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668A	39635-32-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,5,5'-PeCB	120	2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	68194-12-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(107/124)	107/124	NA (Co-elution)	EPA 1668A	E52450749	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,3,3',4,6-PeCB	109	2,3,3',4,6-Pentachlorobiphenyl	EPA 1668A	74472-35-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,4',5'-PeCB	123	2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668A	65510-44-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,5-PeCB	106	2,3,3',4,5-Pentachlorobiphenyl	EPA 1668A	70424-69-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,4',5-PeCB	118	2,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	31508-00-6	mg/l	0.00000174	ND 0.00000068	ND 0.000000648	ND 0.000000662	ND 0.000000719	ND 0.000000659	NE
2,3,3',4',5'-PeCB	122	2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668A	76842-07-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,4,4',5-PeCB	114	2,3,4,4',5-Pentachlorobiphenyl	EPA 1668A	74472-37-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,4'-PeCB	105	2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668A	32598-14-4	mg/l	0.000000897	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',4,5,5'-PeCB	127	3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	39635-33-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
3,3',4,4',5-PeCB	126	3,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	57465-28-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',4,4',6,6'-HxCB	155	2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668A	33979-03-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,5,6,6'-HxCB	152	2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668A	68194-09-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4',6,6'-HxCB	150	2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668A	68194-08-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',6,6'-HxCB	136	2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668A	38411-22-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,6,6'-HxCB	145	2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668A	74472-40-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4',5,6'-HxCB	148	2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668A	74472-41-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(135/151)	135/151	NA (Co-elution)	EPA 1668A		mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',4,4',5,6'-HxCB	154	2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668A	60145-22-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,5',6-HxCB	144	2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668A	68194-14-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(147/149)	147/149	NA (Co-elution)	EPA 1668A	E52450814	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
(134/143)	134/143	NA (Co-elution)	EPA 1668A	E52450780	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
(139/140)	139/140	NA (Co-elution)	EPA 1668A	E52450806	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,3',4,6-HxCB	131	2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668A	61798-70-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,5,6-HxCB	142	2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-61-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,6'-HxCB	132	2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668A	38380-05-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',5,5'-HxCB	133	2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668A	35694-04-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',5,5',6-HxCB	165	2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668A	74472-46-1	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4',5,5'-HxCB	146	2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	51908-16-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4',5,6-HxCB	161	2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668A	74472-43-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(153/168)	153/168	NA (Co-elution)	EPA 1668A	E52450822	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,4,5,5'-HxCB	141	2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668A	52712-04-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,5'-HxCB	130	2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668A	52663-66-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,4',5-HxCB	137	2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668A	35694-06-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4',5',6-HxCB	164	2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668A	74472-45-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(129/138/163)	129/138/163	NA (Co-elution)	EPA 1668A		mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
2,3,3',4,5,6-HxCB	160	2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-62-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,4',6-HxCB	158	2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668A	74472-42-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(128/166)	128/166	NA (Co-elution)	EPA 1668A	E52450764	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,3,3',4,5,5'-HxCB	159	2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668A	39635-35-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4',5,5'-HxCB	162	2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668A	39635-34-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3',4,4',5,5'-HxCB	167	2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	52663-72-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(156/157)	156/157	NA (Co-elution)	EPA 1668A	E52450830	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
3,3',4,4',5,5'-HxCB	169	3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	32774-16-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4',5,6,6'-HpCB	188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668A	74487-85-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',5,6,6'-HpCB	179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-64-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,4',6,6'-HpCB	184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668A	74472-48-3	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,6,6'-HpCB	176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-65-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,5,6,6'-HpCB	186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668A	74472-49-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',5,5',6-HpCB	178	2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-67-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,5',6-HpCB	175	2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668A	40186-70-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE

Table 2-4
Little Mountain Creek Surface Water Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SW008-F0015	ABL-SW008-D0015	ABL-SW009-F0015	ABL-SW010-F0015	ABL-SW011-F0015	ABL-SW012-F0015	15A NCAC 2B Surface Water Standard
Location						Downstream from NC740	Downstream from NC740	LMC at Eastern SCA Ditch	LMC at Middle SCA Ditch	LMC near Western SCA	LMC Upstream of the ABL	
Date						7/12/2018	7/12/2018	7/12/2018	7/12/2018	7/12/2018	7/12/2018	
Time						7:10	7:30	8:25	8:50	9:25	9:55	
2,2',3,4',5,5',6-HpCB	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-68-0	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,4',5,6'-HpCB	182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668A	60145-23-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(183/185)	183/185	NA (Co-elution)	EPA 1668A	E52450863	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,3',4,5,6'-HpCB	174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668A	38411-25-5	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,5',6'-HpCB	177	2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668A	52663-70-4	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,4,4',5,6-HpCB	181	2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668A	74472-47-2	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(171/173)	171/173	NA (Co-elution)	EPA 1668A	E52450848	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,2',3,3',4,5,5'-HpCB	172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668A	52663-74-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,5,5',6-HpCB	192	2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668A	74472-51-8	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
(180/193)	180/193	NA (Co-elution)	EPA 1668A	E52450855	mg/l	ND 0.00000109	ND 0.00000106	ND 0.00000101	ND 0.00000104	ND 0.00000112	ND 0.00000103	NE
2,3,3',4,4',5',6-HpCB	191	2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668A	74472-50-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',4,4',5-HpCB	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668A	35065-30-6	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,4',5,6-HpCB	190	2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668A	41411-64-7	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,3,3',4,4',5,5'-HpCB	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668A	39635-31-9	mg/l	ND 0.000000543	ND 0.000000531	ND 0.000000506	ND 0.000000518	ND 0.000000562	ND 0.000000515	NE
2,2',3,3',5,5',6,6'-OcCB	202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668A	2136-99-4	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,5',6,6'-OcCB	201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668A	40186-71-8	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,4,4',5,6,6'-OcCB	204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668A	74472-52-9	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
(197/200)	197/200	NA (Co-elution)	EPA 1668A	E52450871	mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
(198/199)	198/199	NA (Co-elution)	EPA 1668A	E52450889	mg/l	ND 0.00000163	ND 0.00000159	ND 0.00000152	ND 0.00000155	ND 0.00000169	ND 0.00000154	NE
2,2',3,3',4,4',5,6'-OcCB	196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668A	42740-50-1	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,4,4',5,5',6-OcCB	203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	52663-76-0	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,4',5,6-OcCB	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668A	52663-78-2	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,4',5,5'-OcCB	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668A	35694-08-7	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,3,3',4,4',5,5',6-OcCB	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	74472-53-0	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,5,5',6,6'-NoCB	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668A	52663-77-1	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,4',5,6,6'-NoCB	207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668A	52663-79-3	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
2,2',3,3',4,4',5,5',6-NoCB	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668A	40186-72-9	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
Decachlorobiphenyl	209	Decachlorobiphenyl	EPA 1668A	2051-24-3	mg/l	ND 0.000000814	ND 0.000000797	ND 0.00000076	ND 0.000000776	ND 0.000000843	ND 0.000000772	NE
Total Polychlorinated Biphenyls				1336-36-3	mg/l	**0.000030761**	ND	ND	ND	ND	ND	**0.000001**

Sample times inadvertently left off laboratory chain of custody. Sample times as recorded on bottles were documented in field book.
ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific Method Specified Reporting Limit (EML) in mg/kg.
I - Interference present. Concentration indicated represents the Estimated Maximum Possible Concentration.

Table 2-5
Little Mountain Creek Surface Water Sample Analytical Results
Alcoa/Badin Municipal Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	40 CFR 423 Appendix A Number	Units	ABL-SW008-F005	ABL-SW008-D005	ABL-SW012-F005	15A NCAC 2B Surface Water Standard
Location					**Downstream from NC740**	**Downstream from NC740**	**LMC Upstream of the ABL**	
Date					**7/12/2018**	**7/12/2018**	**7/12/2018**	
Time					**7:10**	**7:30**	**9:55**	
pH				*SU*	7.47	7.39	7.04	**6.0-9.0**
Hardness, Total (SM 2340B)	**EPA 200.7**			*mg/l*	37.8	38.5	39.2	**100**
Antimony	**EPA 200.7**	**7440-36-0**	**114**	*mg/l*	ND $_{0.0039}$	ND $_{0.0039}$	ND $_{0.0039}$	**NE**
Arsenic	**EPA 200.7**	**7440-38-2**	**115**	*mg/l*	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	**0.01**
Beryllium	**EPA 200.7**	**7440-41-7**	**117**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.065**
Cadmium	**EPA 200.7**	**7440-43-9**	**118**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**0.0011**
Chromium	**EPA 200.7**	**7440-47-3**	**119**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.25**
Copper	**EPA 200.7**	**7440-50-8**	**120**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.0051**
Lead	**EPA 200.7**	**7439-92-1**	**122**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.021**
Nickel	**EPA 200.7**	**7440-02-0**	**124**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.025**
Selenium	**EPA 200.7**	**7782-49-2**	**125**	*mg/l*	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	**0.005**
Silver	**EPA 200.7**	**7440-22-4**	**126**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.00055**
Thallium	**EPA 200.7**	**7440-28-0**	**127**	*mg/l*	ND $_{0.0050}$	ND $_{0.0050}$	ND $_{0.0050}$	**NE**
Zinc	**EPA 200.7**	**7440-66-6**	**128**	*mg/l*	ND $_{0.0025}$	ND $_{0.0025}$	ND $_{0.0025}$	**0.049**
Mercury	**EPA 245.1**	**7439-97-6**	**123**	*mg/l*	ND $_{0.000070}$	ND $_{0.000070}$	ND $_{0.000070}$	**0.0000120**
Phenol	**EPA 420.4**	**108-95-2**	**65**	*mg/l*	0.0090 J $_{0.0050}$	0.0066 J $_{0.0050}$	0.0064 J $_{0.0050}$	**0.3**
Cyanide	**SM 4500-CN-E-2011**	**57-12-5**	**121**	*mg/l*	ND $_{0.0040}$	ND $_{0.0040}$	ND $_{0.0040}$	**0.005**
4,4'-DDD	**EPA 608.3**	**72-54-8**	**94**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
4,4'-DDE	**EPA 608.3**	**72-55-9**	**93**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
4,4'-DDT	**EPA 608.3**	**50-29-3**	**92**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.0000002**
Aldrin	**EPA 608.3**	**309-00-2**	**89**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00000005**
alpha-BHC	**EPA 608.3**	**319-84-6**	**102**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
beta-BHC	**EPA 608.3**	**319-85-7**	**103**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Chlordane (Technical)	**EPA 608.3**	**57-74-9**	**91**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**0.0000008**
delta-BHC	**EPA 608.3**	**319-86-8**	**105**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Dieldrin	**EPA 608.3**	**60-57-1**	**90**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00000005**
Endosulfan I	**EPA 608.3**	**959-98-8**	**95**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00005**
Endosulfan II	**EPA 608.3**	**33213-65-9**	**96**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00005**
Endosulfan sulfate	**EPA 608.3**	**1031-07-8**	**97**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Endrin	**EPA 608.3**	**72-20-8**	**98**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.000002**
Endrin aldehyde	**EPA 608.3**	**7421-93-4**	**99**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
gamma-BHC (Lindane)	**EPA 608.3**	**58-89-9**	**104**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00001**
Heptachlor	**EPA 608.3**	**76-44-8**	**100**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**0.00000008**
Heptachlor epoxide	**EPA 608.3**	**1024-57-3**	**101**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
PCB-1016 (Aroclor 1016)	**EPA 608.3**	**12674-11-2**	**112**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1221 (Aroclor 1221)	**EPA 608.3**	**11104-28-2**	**108**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1232 (Aroclor 1232)	**EPA 608.3**	**11141-16-5**	**109**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1242 (Aroclor 1242)	**EPA 608.3**	**53469-21-9**	**106**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1248 (Aroclor 1248)	**EPA 608.3**	**12672-29-6**	**110**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1254 (Aroclor 1254)	**EPA 608.3**	**11097-69-1**	**107**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
PCB-1260 (Aroclor 1260)	**EPA 608.3**	**11096-82-5**	**111**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
Total PCBs	**EPA 608.3**	**--**	**--**	*mg/l*	ND	ND	ND	**0.000001**
Toxaphene	**EPA 608.3**	**8001-35-2**	**113**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**0.0000002**
1,1,1-Trichloroethane	**EPA 624**	**71-55-6**	**11**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0019}$	**NE**
1,1,2,2-Tetrachloroethane	**EPA 624**	**79-34-5**	**15**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**0.00017**
1,1,2-Trichloroethane	**EPA 624**	**79-00-5**	**14**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
1,1-Dichloroethane	**EPA 624**	**75-34-3**	**13**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**NE**
1,1-Dichloroethene	**EPA 624**	**75-35-4**	**29**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0019}$	**NE**
1,2,4-Trichlorobenzene	**EPA 624**	**120-82-1**	**8**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
1,2-Dichlorobenzene	**EPA 624**	**95-50-1**	**25**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
1,2-Dichloroethane	**EPA 624**	**107-06-2**	**10**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**NE**
1,2-Dichloropropane	**EPA 624**	**78-87-5**	**32**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
1,3-Dichlorobenzene	**EPA 624**	**541-73-1**	**26**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
1,4-Dichlorobenzene	**EPA 624**	**106-46-7**	**27**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
2-Chloroethylvinyl ether	**EPA 624**	**110-75-8**	**19**	*mg/l*	ND $_{0.0022}$	ND $_{0.0022}$	ND $_{0.0022}$	**NE**
Acrolein	**EPA 624**	**107-02-8**	**2**	*mg/l*	ND $_{0.0010}$	ND $_{0.0010}$	ND $_{0.0010}$	**NE**
Acrylonitrile	**EPA 624**	**107-13-1**	**3**	*mg/l*	ND $_{0.0115}$	ND $_{0.0115}$	ND $_{0.0115}$	**NE**
Benzene	**EPA 624**	**71-43-2**	**4**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**0.00119**
Bromodichloromethane	**EPA 624**	**75-27-4**	**48**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
Bromoform	**EPA 624**	**75-25-2**	**47**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
Bromomethane	**EPA 624**	**74-83-9**	**46**	*mg/l*	ND $_{0.0010}$	ND $_{0.0010}$	ND $_{0.0010}$	**NE**
Carbon tetrachloride	**EPA 624**	**56-23-5**	**6**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0019}$	**0.000254**
Chlorobenzene	**EPA 624**	**108-90-7**	**7**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
Chloroethane	**EPA 624**	**75-00-3**	**16**	*mg/l*	ND $_{0.0016}$	ND $_{0.0016}$	ND $_{0.0016}$	**NE**
Chloroform	**EPA 624**	**67-66-3**	**23**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0019}$	**NE**
Chloromethane	**EPA 624**	**74-87-3**	**45**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
cis-1,3-Dichloropropene	**EPA 624**	**10061-01-5**	**33**	*mg/l*	ND $_{0.0016}$	ND $_{0.0016}$	ND $_{0.0016}$	**NE**
Dibromochloromethane	**EPA 624**	**124-48-1**	**51**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**NE**
Ethylbenzene	**EPA 624**	**100-41-4**	**38**	*mg/l*	ND $_{0.0016}$	ND $_{0.0016}$	ND $_{0.0016}$	**NE**
Methylene Chloride	**EPA 624**	**75-09-2**	**44**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0019}$	**NE**
Tetrachloroethene	**EPA 624**	**127-18-4**	**85**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**0.0007**
Toluene	**EPA 624**	**108-88-3**	**86**	*mg/l*	ND $_{0.0016}$	ND $_{0.0016}$	ND $_{0.0016}$	**0.011**
trans-1,2-Dichloroethene	**EPA 624**	**156-60-5**	**30**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**NE**
trans-1,3-Dichloropropene	**EPA 624**	**10061-02-6**	**33**	*mg/l*	ND $_{0.0016}$	ND $_{0.0016}$	ND $_{0.0016}$	**NE**
Trichloroethene	**EPA 624**	**79-01-6**	**87**	*mg/l*	ND $_{0.0018}$	ND $_{0.0018}$	ND $_{0.0018}$	**0.0025**
Trichlorofluoromethane	**EPA 624**	**75-69-4**	**#N/A**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0017}$	**NE**
Vinyl chloride	**EPA 624**	**75-01-4**	**88**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**0.000025**
Total Chlorinated Benzenes [1]				*mg/l*	ND	ND	ND	**0.488**

Table 2-5
Little Mountain Creek Surface Water Sample Analytical Results
Alcoa/Badin Municipal Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	40 CFR 423 Appendix A Number	Units	ABL-SW008-F005	ABL-SW008-D005	ABL-SW012-F005	15A NCAC 2B Surface Water Standard
Location					**Downstream from NC740**	**Downstream from NC740**	**LMC Upstream of the ABL**	
Date					**7/12/2018**	**7/12/2018**	**7/12/2018**	
Time					**7:10**	**7:30**	**9:55**	
1,2-Diphenylhydrazine	**EPA 625.1**	**122-66-7**	**37**	*mg/l*	ND $_{0.00090}$	ND $_{0.00090}$	ND $_{0.00087}$	**NE**
2,4,6-Trichlorophenol	**EPA 625.1**	**88-06-2**	**21**	*mg/l*	ND $_{0.0013}$	ND $_{0.0013}$	ND $_{0.0012}$	**NE**
2,4-Dichlorophenol	**EPA 625.1**	**120-83-2**	**31**	*mg/l*	ND $_{0.0017}$	ND $_{0.0017}$	ND $_{0.0016}$	**NE**
2,4-Dimethylphenol	**EPA 625.1**	**105-67-9**	**34**	*mg/l*	ND $_{0.0012}$	ND $_{0.0012}$	ND $_{0.0012}$	**NE**
2,4-Dinitrophenol	**EPA 625.1**	**51-28-5**	**59**	*mg/l*	ND $_{0.0090}$	ND $_{0.0090}$	ND $_{0.0087}$	**NE**
2,4-Dinitrotoluene	**EPA 625.1**	**121-14-2**	**35**	*mg/l*	ND $_{0.00090}$	ND $_{0.00090}$	ND $_{0.00087}$	**NE**
2,6-Dinitrotoluene	**EPA 625.1**	**606-20-2**	**36**	*mg/l*	ND $_{0.00098}$	ND $_{0.00098}$	ND $_{0.00094}$	**NE**
2-Chloronaphthalene	**EPA 625.1**	**91-58-7**	**20**	*mg/l*	ND $_{0.00098}$	ND $_{0.00098}$	ND $_{0.00094}$	**NE**
2-Chlorophenol	**EPA 625.1**	**95-57-8**	**24**	*mg/l*	ND $_{0.0013}$	ND $_{0.0013}$	ND $_{0.0012}$	**NE**
2-Methylnaphthalene	**EPA 625.1**	**91-57-6**	**#N/A**	*mg/l*	ND $_{0.00028}$	ND $_{0.00028}$	ND $_{0.00027}$	**NE**
2-Nitrophenol	**EPA 625.1**	**88-75-5**	**57**	*mg/l*	ND $_{0.00091}$	ND $_{0.00091}$	ND $_{0.00088}$	**NE**
3&4-Methylphenol(m&p Cresol)	**EPA 625.1**	**15831-10-4**	**#N/A**	*mg/l*	ND $_{0.0020}$	ND $_{0.0020}$	ND $_{0.0019}$	**NE**
3,3'-Dichlorobenzidine	**EPA 625.1**	**91-94-1**	**28**	*mg/l*	ND $_{0.0021}$	ND $_{0.0021}$	ND $_{0.0020}$	**NE**
4,6-Dinitro-2-methylphenol	**EPA 625.1**	**534-52-1**	**60**	*mg/l*	ND $_{0.0026}$	ND $_{0.0026}$	ND $_{0.0025}$	**NE**
4-Bromophenylphenyl ether	**EPA 625.1**	**101-55-3**	**41**	*mg/l*	ND $_{0.00082}$	ND $_{0.00082}$	ND $_{0.00079}$	**NE**
4-Chloro-3-methylphenol	**EPA 625.1**	**59-50-7**	**22**	*mg/l*	ND $_{0.0037}$	ND $_{0.0037}$	ND $_{0.0036}$	**NE**
4-Chlorophenylphenyl ether	**EPA 625.1**	**7005-72-3**	**40**	*mg/l*	ND $_{0.00087}$	ND $_{0.00087}$	ND $_{0.00084}$	**NE**
4-Nitrophenol	**EPA 625.1**	**100-02-7**	**58**	*mg/l*	0.0098 J	ND $_{0.0041}$	ND $_{0.0039}$	**NE**
Acenaphthene	**EPA 625.1**	**83-32-9**	**1**	*mg/l*	ND $_{0.00025}$	ND $_{0.00025}$	ND $_{0.00024}$	**NE**
Acenaphthylene	**EPA 625.1**	**208-96-8**	**77**	*mg/l*	ND $_{0.00021}$	ND $_{0.00021}$	ND $_{0.00020}$	**NE**
Anthracene	**EPA 625.1**	**120-12-7**	**78**	*mg/l*	ND $_{0.00014}$	ND $_{0.00014}$	ND $_{0.00013}$	**NE**
Benzidine	**EPA 625.1**	**92-87-5**	**5**	*mg/l*	ND $_{0.0051}$	ND $_{0.0051}$	ND $_{0.0049}$	**NE**
Benzo(a)anthracene	**EPA 625.1**	**56-55-3**	**72**	*mg/l*	0.0053	0.0027 J	ND $_{0.00032}$	**NE**
Benzo(a)pyrene	**EPA 625.1**	**50-32-8**	**73**	*mg/l*	0.0013 J	0.0011 J	ND $_{0.00029}$	**NE**
Benzo(b)fluoranthene	**EPA 625.1**	**205-99-2**	**74**	*mg/l*	0.0015 J	0.0011 J	ND $_{0.00027}$	**NE**
Benzo(g,h,i)perylene	**EPA 625.1**	**191-24-2**	**79**	*mg/l*	ND $_{0.00038}$	ND $_{0.00038}$	ND $_{0.00037}$	**NE**
Benzo(k)fluoranthene	**EPA 625.1**	**207-08-9**	**75**	*mg/l*	0.0017 J	0.0011 J	ND $_{0.00041}$	**NE**
bis(2-Chloroethoxy)methane	**EPA 625.1**	**111-91-1**	**43**	*mg/l*	ND $_{0.00092}$	ND $_{0.00092}$	ND $_{0.00088}$	**NE**
bis(2-Chloroethyl) ether	**EPA 625.1**	**111-44-4**	**18**	*mg/l*	ND $_{0.0010}$	ND $_{0.0010}$	ND $_{0.00096}$	**NE**
bis(2-Ethylhexyl)phthalate	**EPA 625.1**	**117-81-7**	**66**	*mg/l*	0.0048 J	0.0026 J	ND $_{0.00076}$	**NE**
Butylbenzylphthalate	**EPA 625.1**	**85-68-7**	**67**	*mg/l*	0.0061	0.0022 J	ND $_{0.00076}$	**NE**
Chrysene	**EPA 625.1**	**218-01-9**	**76**	*mg/l*	0.0057	0.0030 J	ND $_{0.00020}$	**NE**
Dibenz(a,h)anthracene	**EPA 625.1**	**53-70-3**	**82**	*mg/l*	ND $_{0.00055}$	ND $_{0.00055}$	ND $_{0.00053}$	**NE**
Diethylphthalate	**EPA 625.1**	**84-66-2**	**70**	*mg/l*	ND $_{0.00058}$	ND $_{0.00058}$	ND $_{0.00056}$	**NE**
Dimethylphthalate	**EPA 625.1**	**131-11-3**	**71**	*mg/l*	ND $_{0.00076}$	ND $_{0.00076}$	ND $_{0.00073}$	**NE**
Di-n-butylphthalate	**EPA 625.1**	**84-74-2**	**68**	*mg/l*	ND $_{0.00075}$	ND $_{0.00075}$	ND $_{0.00072}$	**NE**
Di-n-octylphthalate	**EPA 625.1**	**117-84-0**	**69**	*mg/l*	0.0019 J	0.0012 J	ND $_{0.00063}$	**NE**
Fluoranthene	**EPA 625.1**	**206-44-0**	**39**	*mg/l*	ND $_{0.00021}$	ND $_{0.00021}$	ND $_{0.00020}$	**NE**
Fluorene	**EPA 625.1**	**86-73-7**	**80**	*mg/l*	ND $_{0.00021}$	ND $_{0.00021}$	ND $_{0.00020}$	**NE**
Hexachloro-1,3-butadiene	**EPA 625.1**	**87-68-3**	**52**	*mg/l*	ND $_{0.00094}$	ND $_{0.00094}$	ND $_{0.00090}$	**0.00044**
Hexachlorobenzene	**EPA 625.1**	**118-74-1**	**9**	*mg/l*	ND $_{0.00072}$	ND $_{0.00072}$	ND $_{0.00069}$	**NE**
Hexachlorocyclopentadiene	**EPA 625.1**	**77-47-4**	**53**	*mg/l*	ND $_{0.00088}$	ND $_{0.00088}$	ND $_{0.00085}$	**NE**
Hexachloroethane	**EPA 625.1**	**67-72-1**	**12**	*mg/l*	ND $_{0.0011}$	ND $_{0.0011}$	ND $_{0.0011}$	**NE**
Indeno(1,2,3-cd)pyrene	**EPA 625.1**	**193-39-5**	**83**	*mg/l*	ND $_{0.00029}$	ND $_{0.00029}$	ND $_{0.00028}$	**NE**
Isophorone	**EPA 625.1**	**78-59-1**	**54**	*mg/l*	ND $_{0.00089}$	ND $_{0.00089}$	ND $_{0.00086}$	**NE**
Naphthalene	**EPA 625.1**	**91-20-3**	**55**	*mg/l*	ND $_{0.00034}$	ND $_{0.00034}$	0.0011 J	**NE**
Nitrobenzene	**EPA 625.1**	**98-95-3**	**56**	*mg/l*	ND $_{0.0011}$	ND $_{0.0011}$	ND $_{0.0011}$	**NE**
N-Nitrosodimethylamine	**EPA 625.1**	**62-75-9**	**61**	*mg/l*	ND $_{0.00091}$	ND $_{0.00091}$	ND $_{0.00088}$	**NE**
N-Nitroso-di-n-propylamine	**EPA 625.1**	**621-64-7**	**63**	*mg/l*	ND $_{0.00099}$	ND $_{0.00099}$	ND $_{0.00095}$	**NE**
N-Nitrosodiphenylamine	**EPA 625.1**	**86-30-6**	**62**	*mg/l*	ND $_{0.0010}$	ND $_{0.0010}$	ND $_{0.00096}$	**NE**
2,2'-Oxybis(1-chloropropane) [2]	**EPA 625.1**	**108-60-1**	**42**	*mg/l*	ND $_{0.00095}$	ND $_{0.00095}$	ND $_{0.00091}$	**NE**
Pentachlorophenol	**EPA 625.1**	**87-86-5**	**64**	*mg/l*	ND $_{0.0046}$	ND $_{0.0046}$	ND $_{0.0044}$	**NE**
Phenanthrene	**EPA 625.1**	**85-01-8**	**81**	*mg/l*	ND $_{0.00022}$	ND $_{0.00022}$	ND $_{0.00021}$	**NE**
Phenol	**EPA 625.1**	**108-95-2**	**65**	*mg/l*	ND $_{0.0019}$	ND $_{0.0019}$	ND $_{0.0018}$	**NE**
Pyrene	**EPA 625.1**	**129-00-0**	**84**	*mg/l*	0.0012 J	ND $_{0.00019}$	ND $_{0.00018}$	**NE**
Total PAHs [3]	**EPA 625.1**	**--**	**--**	*mg/l*	**0.0155**	**0.009**	ND	**0.0000028**
Asbestos	**EPA 100.2**	**1332-21-4**	**116**	*mf/l*	ND $_{0.97}$	ND $_{0.24}$	ND $_{0.49}$	**NE**
2,3,7,8-TCDD [4]	**EPA 1613**	**1746-01-6**	**129**	*mg/l*	ND $_{0.00000001}$	ND $_{0.00000001}$	ND $_{0.00000001}$	**5E-12**

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific MDL in mg/l.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
NE - Not established.
15A NCAC 2B acute standards for cadmium, chromium, copper, lead, silver, and zinc are calculated as hardness dependent using a hardness value of 36 mg/l.
mf/l - million fibers per liter
[1] - Total chlorinated benzenes are the sum of chlorobenzene, 1,2,3-trichlorobenzene, 1,2,4 trichlorobenzene, 1,3,5-trichlorobenzene, 1,2,3,4-tetrachlorobenzene, 1,2,3,5-tetrachlorobenzene, 1,2,4,5-tetrachlorobenzene, pentachlorobenzene, and hexachlorobenzene.
[2] - Per EPA correspondence, 40 CFR 423 Appendix A Number 42 (misidentified as bis(2-Chloroisopropyl)ether) is associated with CAS Number 108-60-1 (2, 2'-oxybis (1-chloropropane)).
[3] - Total PAHs are the sum of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene detections.
[4] - 2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin

Table 2-6
Eastern Drainage Ditch Sediment Sample Analytical Results
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-SD010-F005	ABL-SD011-F005	ABL-SD012-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location				**Lower Ditch**	**Middle Ditch**	**Upper Ditch**	
Depth				**Surface**	**Surface**	**Surface**	
Date				**7/11/2018**	**7/11/2018**	**7/11/2018**	
Time				**13:45**	**13:10**	**12:35**	
Percent Moisture	**ASTM D2974-87**		*%*	32.8	42.4	31.2	
PCB-1016 (Aroclor 1016)	**EPA 8082**	**12674-11-2**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1221 (Aroclor 1221)	**EPA 8082**	**11104-28-2**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1232 (Aroclor 1232)	**EPA 8082**	**11141-16-5**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1242 (Aroclor 1242)	**EPA 8082**	**53469-21-9**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1248 (Aroclor 1248)	**EPA 8082**	**12672-29-6**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1254 (Aroclor 1254)	**EPA 8082**	**11097-69-1**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
PCB-1260 (Aroclor 1260)	**EPA 8082**	**11096-82-5**	*mg/kg*	ND $_{0.0218}$	ND $_{0.0265}$	ND $_{0.0218}$	**NE**
Total Polychlorinated Biphenyls		**1336-36-3**	*mg/kg*	ND	ND	ND	**0.0598**
1-Methylnaphthalene	**EPA 8270**	**90-12-0**	*mg/kg*	ND $_{0.0018}$	0.0027 J	ND $_{0.0017}$	**0.141**
2-Methylnaphthalene	**EPA 8270**	**91-57-6**	*mg/kg*	0.0023 J	0.0042 J	ND $_{0.0016}$	**0.0202**
Acenaphthene	**EPA 8270**	**83-32-9**	*mg/kg*	0.0035 J	**0.0262**	ND $_{0.0022}$	**0.0067**
Acenaphthylene	**EPA 8270**	**208-96-8**	*mg/kg*	ND $_{0.0019}$	ND $_{0.0023}$	ND $_{0.0019}$	**0.0059**
Anthracene	**EPA 8270**	**120-12-7**	*mg/kg*	0.0074 J	0.0563	0.0036 J	**0.057**
Benzo(a)anthracene	**EPA 8270**	**56-55-3**	*mg/kg*	0.0400	**0.287**	0.0171	**0.108**
Benzo(a)pyrene	**EPA 8270**	**50-32-8**	*mg/kg*	0.0456	**0.319**	0.0191	**0.15**
Benzo(b)fluoranthene	**EPA 8270**	**205-99-2**	*mg/kg*	0.0419	**0.286**	0.0176	**0.19**
Benzo(g,h,i)perylene	**EPA 8270**	**191-24-2**	*mg/kg*	0.0230	0.146	0.0100 J	**0.17**
Benzo(k)fluoranthene	**EPA 8270**	**207-08-9**	*mg/kg*	0.0158	0.109	0.0080 J	**0.24**
Chrysene	**EPA 8270**	**218-01-9**	*mg/kg*	0.0372	**0.254**	0.0162	**0.166**
Dibenz(a,h)anthracene	**EPA 8270**	**53-70-3**	*mg/kg*	ND $_{0.0027}$	0.0131 J	ND $_{0.0026}$	**0.033**
Fluoranthene	**EPA 8270**	**206-44-0**	*mg/kg*	0.0539	0.381	0.0232	**0.423**
Fluorene	**EPA 8270**	**86-73-7**	*mg/kg*	0.0028 J	0.0215	ND $_{0.0023}$	**0.077**
Indeno(1,2,3-cd)pyrene	**EPA 8270**	**193-39-5**	*mg/kg*	0.0217	0.137	0.0093 J	**0.2**
Naphthalene	**EPA 8270**	**91-20-3**	*mg/kg*	ND $_{0.0034}$	0.0059 J	ND $_{0.0033}$	**0.176**
Phenanthrene	**EPA 8270**	**85-01-8**	*mg/kg*	0.0295	**0.235**	0.0140 J	**0.204**
Pyrene	**EPA 8270**	**129-00-0**	*mg/kg*	0.0445	**0.307**	0.0181	**0.195**
Total Low Molecular Weight PAHs				0.04556	0.3518	0.0176	**0.6**
Total High Molecular Weight PAHs				0.3531	**2.4741**	0.1526	**1**
Total Polycyclic Aromatic Hydrocarbons				0.3691	**2.5909**	0.1562	**1.61**

Sample times inadvertently left off laboratory chain of custody. Sample times as recorded on bottles were documented in field book.
ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific MDL in mg/kg.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
ESV derived from Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update
NE - Not established.

Table 2-7
Eastern Drainage Ditch Sediment Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SD010-F005	ABL-SD011-F005	ABL-SD012-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location						Lower Ditch	Middle Ditch	Upper Ditch	
Depth						Surface	Surface	Surface	
Date						7/11/2018	7/11/2018	7/11/2018	
Time						13:45	13:10	12:35	
2-MoCB	1	2-Chlorobiphenyl	EPA 1668A	2051-60-7	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3-MoCB	2	3-Chlorobiphenyl	EPA 1668A	2051-61-8	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
4-MoCB	3	4-Chlorobiphenyl	EPA 1668A	2051-62-9	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,2'-DiCB	4	2,2'-Dichlorobiphenyl	EPA 1668A	13029-08-8	mg/kg	0.0000668	0.000159	ND 0.000025	NE
2,6-DiCB	10	2,6-Dichlorobiphenyl	EPA 1668A	33146-45-1	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,5-DiCB	9	2,5-Dichlorobiphenyl	EPA 1668A	34883-39-1	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,4-DiCB	7	2,4-Dichlorobiphenyl	EPA 1668A	33284-50-3	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,3'-DiCB	6	2,3'-Dichlorobiphenyl	EPA 1668A	25569-80-6	mg/kg	ND 0.000025	0.000033	ND 0.000025	NE
2,3-DiCB	5	2,3-Dichlorobiphenyl	EPA 1668A	16605-91-7	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,4'-DiCB	8	2,4'-Dichlorobiphenyl	EPA 1668A	34883-43-7	mg/kg	0.000108	0.000316	ND 0.000025	NE
3,5-DiCB	14	3,5-Dichlorobiphenyl	EPA 1668A	34883-41-5	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3,3'-DiCB	11	3,3'-Dichlorobiphenyl	EPA 1668A	2050-67-1	mg/kg	ND 0.000245	ND 0.000245	ND 0.000245	NE
(12/13)	12/13	NA (Co-elution)	EPA 1668A	E52450566	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
4,4'-DiCB	15	4,4'-Dichlorobiphenyl	EPA 1668A	2050-68-2	mg/kg	0.0000652	0.000101	ND 0.000033	NE
2,2',6-TrCB	19	2,2',6-Trichlorobiphenyl	EPA 1668A	38444-73-4	mg/kg	ND 0.000025	0.000105	ND 0.000025	NE
(18/30)	18/30	NA (Co-elution)	EPA 1668A	E52450574	mg/kg	ND 0.00005	0.000179	ND 0.00005	NE
2,2',4-TrCB	17	2,2',4-Trichlorobiphenyl	EPA 1668A	37680-66-3	mg/kg	0.000102	0.000289	ND 0.000025	NE
2,3',6-TrCB	27	2,3',6-Trichlorobiphenyl	EPA 1668A	38444-76-7	mg/kg	ND 0.000025	0.0000423	ND 0.000025	NE
2,3,6-TrCB	24	2,3,6-Trichlorobiphenyl	EPA 1668A	55702-45-9	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,2',3-TrCB	16	2,2',3-Trichlorobiphenyl	EPA 1668A	38444-78-9	mg/kg	ND 0.000025	0.000165	ND 0.000025	NE
2,4',6-TrCB	32	2,4',6-Trichlorobiphenyl	EPA 1668A	38444-77-8	mg/kg	0.0000817	0.000278	ND 0.000025	NE
2,3',5'-TrCB	34	2,3',5'-Trichlorobiphenyl	EPA 1668A	37680-68-5	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
2,3,5-TrCB	23	2,3,5-Trichlorobiphenyl	EPA 1668A	55720-44-0	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
(26/29)	26/29	NA (Co-elution)	EPA 1668A	E52450608	mg/kg	ND 0.00005	0.000123	ND 0.00005	NE
2,3',4-TrCB	25	2,3',4-Trichlorobiphenyl	EPA 1668A	55712-37-3	mg/kg	ND 0.000025	0.0000421	ND 0.000025	NE
2,4',5-TrCB	31	2,4',5-Trichlorobiphenyl	EPA 1668A	16606-02-3	mg/kg	0.000354	0.00132	ND 0.00013	NE
(20/28)	20/28	NA (Co-elution)	EPA 1668A	E52450582	mg/kg	0.000535	0.00148	ND 0.000129	NE
(21/33)	21/33	NA (Co-elution)	EPA 1668A	E52450590	mg/kg	ND 0.000135	0.00052	ND 0.000135	NE
2,3,4'-TrCB	22	2,3,4'-Trichlorobiphenyl	EPA 1668A	38444-85-8	mg/kg	ND 0.000095	0.000369	ND 0.000095	NE
3,3',5-TrCB	36	3,3',5-Trichlorobiphenyl	EPA 1668A	38444-87-0	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3,4',5-TrCB	39	3,4',5-Trichlorobiphenyl	EPA 1668A	38444-88-1	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3,4,5-TrCB	38	3,4,5-Trichlorobiphenyl	EPA 1668A	53555-66-1	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3,3',4-TrCB	35	3,3',4-Trichlorobiphenyl	EPA 1668A	37680-69-6	mg/kg	ND 0.000025	ND 0.000025	ND 0.000025	NE
3,4,4'-TrCB	37	3,4,4'-Trichlorobiphenyl	EPA 1668A	38444-90-5	mg/kg	0.00011	0.00049	ND 0.000053	NE
2,2',6,6'-TeCB	54	2,2',6,6'-Tetrachlorobiphenyl	EPA 1668A	15968-05-5	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
(50/53)	50/53	NA (Co-elution)	EPA 1668A	E52450657	mg/kg	0.000114	0.000361	ND 0.0001	NE
(45/51)	45/51	NA (Co-elution)	EPA 1668A	E52450632	mg/kg	0.000111	0.000387	ND 0.0001	NE
2,2',3,6'-TeCB	46	2,2',3,6'-Tetrachlorobiphenyl	EPA 1668A	41464-47-5	mg/kg	ND 0.00005	0.000118	ND 0.00005	NE
2,2',5,5'-TeCB	52	2,2',5,5'-Tetrachlorobiphenyl	EPA 1668A	35693-99-3	mg/kg	0.000821	0.00277	ND 0.000154	NE
2,3',5',6-TeCB	73	2,3',5',6-Tetrachlorobiphenyl	EPA 1668A	74338-23-1	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
43/73	43/73	NA (Co-elution)	EPA 1668A		mg/kg	ND 0.00005	0.0000749	ND 0.00005	NE
(49/69)	49/69	NA (Co-elution)	EPA 1668A	E52450640	mg/kg	0.000574	0.00176	ND 0.0001	NE
2,2',4,5-TeCB	48	2,2',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-47-9	mg/kg	0.000122	0.000458	ND 0.00005	NE
(44/47/65)	44/47/65	NA (Co-elution)	EPA 1668A	E52450624	mg/kg	0.000715	0.00244	ND 0.00015	NE
(59/62/75)	59/62/75	NA (Co-elution)	EPA 1668A	E52450665	mg/kg	ND 0.00015	0.000207	ND 0.00015	NE
2,2',3,4'-TeCB	42	2,2',3,4'-Tetrachlorobiphenyl	EPA 1668A	36559-22-5	mg/kg	0.00018	0.000733	ND 0.00005	NE
(40/41/71)	40/41/71	NA (Co-elution)	EPA 1668A	E52450616	mg/kg	0.000334	0.00124	ND 0.00015	NE
2,3,4',6-TeCB	64	2,3,4',6-Tetrachlorobiphenyl	EPA 1668A	52663-58-8	mg/kg	0.000426	0.00146	ND 0.00005	NE
2,3',5,5'-TeCB	72	2,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	41464-42-0	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3',4,5'-TeCB	68	2,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	73575-52-7	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3,3',5-TeCB	57	2,3,3',5-Tetrachlorobiphenyl	EPA 1668A	70424-67-8	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3,3',5'-TeCB	58	2,3,3',5'-Tetrachlorobiphenyl	EPA 1668A	41464-49-7	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3',4,5-TeCB	67	2,3',4,5-Tetrachlorobiphenyl	EPA 1668A	73575-53-8	mg/kg	ND 0.00005	0.0000634	ND 0.00005	NE
2,3,4',5-TeCB	63	2,3,4',5-Tetrachlorobiphenyl	EPA 1668A	74472-34-7	mg/kg	0.0000516	0.000172	ND 0.00005	NE
(61/70/74/76)	60/70/74/76	NA (Co-elution)	EPA 1668A	E52450673	mg/kg	0.00156	0.00605	ND 0.0002	NE
2,3',4,4'-TeCB	66	2,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-10-0	mg/kg	0.00104	0.00387	ND 0.000084	NE
2,3,3',4-TeCB	55	2,3,3',4-Tetrachlorobiphenyl	EPA 1668A	74338-24-2	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3,3',4'-TeCB	56	2,3,3',4'-Tetrachlorobiphenyl	EPA 1668A	41464-43-1	mg/kg	0.000379	0.00158	ND 0.00005	NE
2,3,4,4'-TeCB	60	2,3,4,4'-Tetrachlorobiphenyl	EPA 1668A	33025-41-1	mg/kg	0.000177	0.000979	ND 0.00005	NE
3,3',5,5'-TeCB	80	3,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	33284-52-5	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
3,3',4,5'-TeCB	79	3,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	41464-48-6	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
3,3',4,5-TeCB	78	3,3',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-49-1	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
3,4,4',5-TeCB	81	3,4,4',5-Tetrachlorobiphenyl	EPA 1668A	70362-50-4	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
3,3',4,4'-TeCB	77	3,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-13-3	mg/kg	0.000097	0.000534	ND 0.00005	NE
2,2',4,6,6'-PeCB	104	2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668A	56558-16-8	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,6,6'-PeCB	96	2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668A	73575-54-9	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',4,5',6-PeCB	103	2,2',4,5',6-Pentachlorobiphenyl	EPA 1668A	60145-21-3	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,5,6'-PeCB	94	2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668A	73575-55-0	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,5',6-PeCB	95	2,2',3,5',6-Pentachlorobiphenyl	EPA 1668A	38379-99-6	mg/kg	0.000378	0.00231	ND 0.000095	NE
(93/98/100/102)	93/98/100/102	NA (Co-elution)	EPA 1668A		mg/kg	ND 0.0002	0.000239	ND 0.0002	NE
(88/91)	88/91	NA (Co-elution)	EPA 1668A	E52450715	mg/kg	0.00014	0.000612	ND 0.0001	NE
2,2',3,3',6-PeCB	84	2,2',3,3',6-Pentachlorobiphenyl	EPA 1668A	52663-60-2	mg/kg	0.000145	0.000709	ND 0.00005	NE
2,2',3,4,6'-PeCB	89	2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668A	73575-57-2	mg/kg	ND 0.00005	0.0000882	ND 0.00005	NE
2,3',4,5',6-PeCB	121	2,3',4,5',6-Pentachlorobiphenyl	EPA 1668A	56558-18-0	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,5,5'-PeCB	92	2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668A	52663-61-3	mg/kg	0.000123	0.000884	ND 0.00005	NE
(90/101/113)	90/101/113	NA (Co-elution)	EPA 1668A	E52450723	mg/kg	0.000601	0.00615	ND 0.00015	NE
2,2',3,3',5-PeCB	83	2,2',3,3',5-Pentachlorobiphenyl	EPA 1668A	60145-20-2	mg/kg	ND 0.00005	0.000377	ND 0.00005	NE
2,2',4,4',5-PeCB	99	2,2',4,4',5-Pentachlorobiphenyl	EPA 1668A	38380-01-7	mg/kg	0.000495	0.00288	ND 0.00005	NE
2,3,3',5,6-PeCB	112	2,3,3',5,6-Pentachlorobiphenyl	EPA 1668A	74472-36-9	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
(86/87/97/108/119/125)	86/87/97/108/119'125	NA (Co-elution)	EPA 1668A	E52450707	mg/kg	0.000439	0.00348	ND 0.0003	NE
(85/117/116)	85/117/116	NA (Co-elution)	EPA 1668A	E52450699	mg/kg	0.000264	0.00157	ND 0.00015	NE
(110/115)	110/115	NA (Co-elution)	EPA 1668A	E52450756	mg/kg	0.000768	0.00529	ND 0.0001	NE
2,2',3,3',4-PeCB	82	2,2',3,3',4-Pentachlorobiphenyl	EPA 1668A	52663-62-4	mg/kg	0.000104	0.000797	ND 0.00005	NE
2,3,3',5,5'-PeCB	111	2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668A	39635-32-0	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3',4,5,5'-PeCB	120	2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	68194-12-7	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
(107/124)	107/124	NA (Co-elution)	EPA 1668A	E52450749	mg/kg	ND 0.0001	0.000305	ND 0.0001	NE
2,3,3',4,6-PeCB	109	2,3,3',4,6-Pentachlorobiphenyl	EPA 1668A	74472-35-8	mg/kg	0.0000608	0.000545	ND 0.00005	NE
2,3',4,4',5'-PeCB	123	2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668A	65510-44-3	mg/kg	ND 0.00005	0.000297	ND 0.00005	NE
2,3,3',4,5-PeCB	106	2,3,3',4,5-Pentachlorobiphenyl	EPA 1668A	70424-69-0	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,3',4,4',5-PeCB	118	2,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	31508-00-6	mg/kg	0.000681	0.0081	ND 0.000064	NE
2,3,3',4',5'-PeCB	122	2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668A	76842-07-4	mg/kg	ND 0.00005	0.000162	ND 0.00005	NE
2,3,4,4',5-PeCB	114	2,3,4,4',5-Pentachlorobiphenyl	EPA 1668A	74472-37-0	mg/kg	ND 0.00005	0.000388	ND 0.00005	NE
2,3,3',4,4'-PeCB	105	2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668A	32598-14-4	mg/kg	0.000408	0.0044	ND 0.00005	NE
3,3',4,5,5'-PeCB	127	3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	39635-33-1	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
3,3',4,4',5-PeCB	126	3,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	57465-28-8	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',4,4',6,6'-HxCB	155	2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668A	33979-03-2	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,5,6,6'-HxCB	152	2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668A	68194-09-2	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,4',6,6'-HxCB	150	2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668A	68194-08-1	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,3',6,6'-HxCB	136	2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668A	38411-22-2	mg/kg	ND 0.00005	0.00296	ND 0.00005	NE
2,2',3,4,6,6'-HxCB	145	2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668A	74472-40-5	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,4',5,6'-HxCB	148	2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668A	74472-41-6	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
(135/151)	135/151	NA (Co-elution)	EPA 1668A		mg/kg	0.000147	0.0153	ND 0.0001	NE
2,2',4,4',5,6'-HxCB	154	2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668A	60145-22-4	mg/kg	ND 0.00005	0.0000614	ND 0.00005	NE
2,2',3,4,5',6-HxCB	144	2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668A	68194-14-9	mg/kg	ND 0.00005	0.00229	ND 0.00005	NE
(147/149)	147/149	NA (Co-elution)	EPA 1668A	E52450814	mg/kg	0.000287	0.0318	ND 0.0001	NE
(134/143)	134/143	NA (Co-elution)	EPA 1668A	E52450780	mg/kg	ND 0.0001	0.00117	ND 0.0001	NE
(139/140)	139/140	NA (Co-elution)	EPA 1668A	E52450806	mg/kg	ND 0.0001	ND 0.0001	ND 0.0001	NE
2,2',3,3',4,6-HxCB	131	2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668A	61798-70-7	mg/kg	ND 0.00005	0.00021	ND 0.00005	NE
2,2',3,4,5,6-HxCB	142	2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-61-4	mg/kg	ND 0.00005	ND 0.00005	ND 0.00005	NE
2,2',3,3',4,6'-HxCB	132	2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668A	38380-05-1	mg/kg	0.000114	0.0085	ND 0.00005	NE
2,2',3,3',5,5'-HxCB	133	2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668A	35694-04-3	mg/kg	ND 0.00005	0.00045	ND 0.00005	NE

Table 2-7
Eastern Drainage Ditch Sediment Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SD010-F005	ABL-SD011-F005	ABL-SD012-F005	EPA Freshwater Sediment Ecological Screening Value (ESV)
Location						**Lower Ditch**	**Middle Ditch**	**Upper Ditch**	
Depth						**Surface**	**Surface**	**Surface**	
Date						**7/11/2018**	**7/11/2018**	**7/11/2018**	
Time						**13:45**	**13:10**	**12:35**	
2,3,3',5,5',6-HxCB	165	2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668A	74472-46-1	*mg/kg*	ND $_{0.00005}$	0.000223	ND $_{0.00005}$	NE
2,2',3,4',5,5'-HxCB	146	2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	51908-16-8	*mg/kg*	0.0000663	0.00615	ND $_{0.00005}$	NE
2,3,3',4,5',6-HxCB	161	2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668A	74472-43-8	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
(153/168)	153/168	NA (Co-elution)	EPA 1668A	E52450822	*mg/kg*	0.000408	0.056	0.000187	NE
2,2',3,4,5,5'-HxCB	141	2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668A	52712-04-6	*mg/kg*	0.0000697	0.0132	ND $_{0.00005}$	NE
2,2',3,3',4,5'-HxCB	130	2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668A	52663-66-8	*mg/kg*	ND $_{0.00005}$	0.0012	ND $_{0.00005}$	NE
2,2',3,4,4',5-HxCB	137	2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668A	35694-06-5	*mg/kg*	ND $_{0.00005}$	0.000386	ND $_{0.00005}$	NE
2,3,3',4',5',6-HxCB	164	2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668A	74472-45-0	*mg/kg*	ND $_{0.00005}$	0.00262	ND $_{0.00005}$	NE
(129/138/163)	129/138/163	NA (Co-elution)	EPA 1668A		*mg/kg*	0.000497	0.0495	0.000214	NE
2,3,3',4,5,6-HxCB	160	2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-62-5	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
2,3,3',4,4',6-HxCB	158	2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668A	74472-42-7	*mg/kg*	ND $_{0.00005}$	0.00397	ND $_{0.00005}$	NE
(128/166)	128/166	NA (Co-elution)	EPA 1668A	E52450764	*mg/kg*	ND $_{0.0001}$	0.00432	ND $_{0.0001}$	NE
2,3,3',4,5,5'-HxCB	159	2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668A	39635-35-3	*mg/kg*	ND $_{0.00005}$	0.00168	ND $_{0.00005}$	NE
2,3,3',4',5,5'-HxCB	162	2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668A	39635-34-2	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
2,3',4,4',5,5'-HxCB	167	2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	52663-72-6	*mg/kg*	ND $_{0.00005}$	0.0013	ND $_{0.00005}$	NE
(156/157)	156/157	NA (Co-elution)	EPA 1668A	E52450830	*mg/kg*	ND $_{0.0001}$	0.00383	ND $_{0.0001}$	NE
3,3',4,4',5,5'-HxCB	169	3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	32774-16-6	*mg/kg*	ND $_{0.00005}$	0.000165 I	ND $_{0.00005}$	NE
2,2',3,4',5,6,6'-HpCB	188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668A	74487-85-7	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
2,2',3,3',5,6,6'-HpCB	179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-64-6	*mg/kg*	0.0000514	0.0185	ND $_{0.00005}$	NE
2,2',3,4,4',6,6'-HpCB	184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668A	74472-48-3	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
2,2',3,3',4,6,6'-HpCB	176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-65-7	*mg/kg*	ND $_{0.00005}$	0.00589	ND $_{0.00005}$	NE
2,2',3,4,5,6,6'-HpCB	186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668A	74472-49-4	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
2,2',3,3',5,5',6-HpCB	178	2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-67-9	*mg/kg*	ND $_{0.00005}$	0.00967	ND $_{0.00005}$	NE
2,2',3,3',4,5',6-HpCB	175	2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668A	40186-70-7	*mg/kg*	ND $_{0.00005}$	0.00189	ND $_{0.00005}$	NE
2,2',3,4',5,5',6-HpCB	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-68-0	*mg/kg*	0.000189	0.0591	0.0000609	NE
2,2',3,4,4',5,6'-HpCB	182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668A	60145-23-5	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
(183/185)	183/185	NA (Co-elution)	EPA 1668A	E52450863	*mg/kg*	ND $_{0.0001}$	0.0352	ND $_{0.0001}$	NE
2,2',3,3',4,5,6'-HpCB	174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668A	38411-25-5	*mg/kg*	0.000126	0.0461	ND $_{0.00005}$	NE
2,2',3,3',4,5',6'-HpCB	177	2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668A	52663-70-4	*mg/kg*	0.0000779	0.0266	ND $_{0.00005}$	NE
2,2',3,4,4',5,6-HpCB	181	2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668A	74472-47-2	*mg/kg*	ND $_{0.00005}$	0.0000749	ND $_{0.00005}$	NE
(171/173)	171/173	NA (Co-elution)	EPA 1668A	E52450848	*mg/kg*	ND $_{0.0001}$	0.0129	ND $_{0.0001}$	NE
2,2',3,3',4,5,5'-HpCB	172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668A	52663-74-8	*mg/kg*	ND $_{0.00005}$	0.00807	ND $_{0.00005}$	NE
2,3,3',4,5,5',6-HpCB	192	2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668A	74472-51-8	*mg/kg*	ND $_{0.00005}$	ND $_{0.00005}$	ND $_{0.00005}$	NE
(180/193)	180/193	NA (Co-elution)	EPA 1668A	E52450855	*mg/kg*	0.000263	0.119	0.000117	NE
2,3,3',4,4',5',6-HpCB	191	2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668A	74472-50-7	*mg/kg*	ND $_{0.00005}$	0.00203	ND $_{0.00005}$	NE
2,2',3,3',4,4',5-HpCB	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668A	35065-30-6	*mg/kg*	0.000111	0.0436	ND $_{0.00005}$	NE
2,3,3',4,4',5,6-HpCB	190	2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668A	41411-64-7	*mg/kg*	ND $_{0.00005}$	0.0112	ND $_{0.00005}$	NE
2,3,3',4,4',5,5'-HpCB	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668A	39635-31-9	*mg/kg*	ND $_{0.00005}$	0.00157	ND $_{0.00005}$	NE
2,2',3,3',5,5',6,6'-OcCB	202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668A	2136-99-4	*mg/kg*	ND $_{0.000075}$	0.00554	ND $_{0.000075}$	NE
2,2',3,3',4,5',6,6'-OcCB	201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668A	40186-71-8	*mg/kg*	ND $_{0.000075}$	0.00462	ND $_{0.000075}$	NE
2,2',3,4,4',5,6,6'-OcCB	204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668A	74472-52-9	*mg/kg*	ND $_{0.000075}$	ND $_{0.000075}$	ND $_{0.000075}$	NE
(197/200)	197/200	NA (Co-elution)	EPA 1668A	E52450871	*mg/kg*	ND $_{0.00015}$	0.00541	ND $_{0.00015}$	NE
(198/199)	198/199	NA (Co-elution)	EPA 1668A	E52450889	*mg/kg*	ND $_{0.00015}$	0.0351	ND $_{0.00015}$	NE
2,2',3,3',4,4',5,6'-OcCB	196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668A	42740-50-1	*mg/kg*	ND $_{0.000075}$	0.0177	ND $_{0.000075}$	NE
2,2',3,4,4',5,5',6-OcCB	203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	52663-76-0	*mg/kg*	ND $_{0.000075}$	0.0202	ND $_{0.000075}$	NE
2,2',3,3',4,4',5,6-OcCB	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668A	52663-78-2	*mg/kg*	ND $_{0.000075}$	0.013	ND $_{0.000075}$	NE
2,2',3,3',4,4',5,5'-OcCB	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668A	35694-08-7	*mg/kg*	ND $_{0.000075}$	0.0317	ND $_{0.000075}$	NE
2,3,3',4,4',5,5',6-OcCB	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	74472-53-0	*mg/kg*	ND $_{0.000075}$	0.0015	ND $_{0.000075}$	NE
2,2',3,3',4,5,5',6,6'-NoCB	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668A	52663-77-1	*mg/kg*	ND $_{0.000075}$	0.00143	ND $_{0.000075}$	NE
2,2',3,3',4,4',5,6,6'-NoCB	207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668A	52663-79-3	*mg/kg*	ND $_{0.000075}$	0.00117	ND $_{0.000075}$	NE
2,2',3,3',4,4',5,5',6-NoCB	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668A	40186-72-9	*mg/kg*	ND $_{0.000075}$	0.00666	ND $_{0.000075}$	NE
Decachlorobiphenyl	209	Decachlorobiphenyl	EPA 1668A	2051-24-3	*mg/kg*	ND $_{0.000075}$	0.000113	ND $_{0.000075}$	NE
Total Polychlorinated Biphenyls					*mg/kg*	**0.0151384**	**0.8236752**	0.0005789	**0.0598/0.014**

Sample times inadvertently left off laboratory chain of custody. Sample times as recorded on bottles were documented in field book.
ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific Method Specified Reporting Limit (EML) in mg/kg.
ESV derived from Region 4 Ecological Risk Assessment Supplemental Guidance - March 2018 Update include both aquatic and wildlife based values.
NE - Not established.

Table 2-8
Eastern Drainage Ditch Surface Water Sample Analytical Results
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-SW013-F005	ABL-SW014-F005	ABL-SW015-F005	15A NCAC 2B Surface Water Standard
Location				**Lower Ditch**	**Middle Ditch**	**Upper Ditch**	
Date				**7/11/2018**	**7/11/2018**	**7/11/2018**	
Time				**13:25**	**12:50**	**12:20**	
Fluoride	**EPA 300.0**	**16984-48-8**	*mg/l*	1.2	**2.2**	**6.0**	**1.8**
Cyanide	**EPA 9012B**	**57-12-5**	*mg/l*	**0.064**	**0.051**	**0.014**	**0.005**
Available Cyanide	**OIA1677**		*mg/l*	0.0034	0.0038	0.00080 J	**NE**
PCB-1016 (Aroclor 1016)	**EPA 8082**	**12674-11-2**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1221 (Aroclor 1221)	**EPA 8082**	**11104-28-2**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1232 (Aroclor 1232)	**EPA 8082**	**11141-16-5**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1242 (Aroclor 1242)	**EPA 8082**	**53469-21-9**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1248 (Aroclor 1248)	**EPA 8082**	**12672-29-6**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1254 (Aroclor 1254)	**EPA 8082**	**11097-69-1**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
PCB-1260 (Aroclor 1260)	**EPA 8082**	**11096-82-5**	*mg/l*	ND $_{0.00050}$	ND $_{0.00042}$	ND $_{0.00050}$	**NE**
Total Polychlorinated Biphenyls		**1336-36-3**	*mg/l*	ND	ND	ND	**0.000001**
1-Methylnaphthalene	**EPA 8270**	**90-12-0**	*mg/l*	ND $_{0.0020}$	ND $_{0.0020}$	ND $_{0.0020}$	**NE**
2-Methylnaphthalene	**EPA 8270**	**91-57-6**	*mg/l*	ND $_{0.0020}$	ND $_{0.0020}$	ND $_{0.0020}$	**NE**
Acenaphthene	**EPA 8270**	**83-32-9**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
Acenaphthylene	**EPA 8270**	**208-96-8**	*mg/l*	ND $_{0.00050}$	ND $_{0.00050}$	ND $_{0.00050}$	**NE**
Anthracene	**EPA 8270**	**120-12-7**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Benzo(a)anthracene	**EPA 8270**	**56-55-3**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Benzo(a)pyrene	**EPA 8270**	**50-32-8**	*mg/l*	ND $_{0.00010}$	ND $_{0.00010}$	ND $_{0.00010}$	**NE**
Benzo(b)fluoranthene	**EPA 8270**	**205-99-2**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Benzo(g,h,i)perylene	**EPA 8270**	**191-24-2**	*mg/l*	ND $_{0.00020}$	ND $_{0.00020}$	ND $_{0.00020}$	**NE**
Benzo(k)fluoranthene	**EPA 8270**	**207-08-9**	*mg/l*	ND $_{0.00020}$	ND $_{0.00020}$	ND $_{0.00020}$	**NE**
Chrysene	**EPA 8270**	**218-01-9**	*mg/l*	ND $_{0.00010}$	ND $_{0.00010}$	ND $_{0.00010}$	**NE**
Dibenz(a,h)anthracene	**EPA 8270**	**53-70-3**	*mg/l*	ND $_{0.00015}$	ND $_{0.00015}$	ND $_{0.00015}$	**NE**
Fluoranthene	**EPA 8270**	**206-44-0**	*mg/l*	ND $_{0.00030}$	ND $_{0.00030}$	ND $_{0.00030}$	**NE**
Fluorene	**EPA 8270**	**86-73-7**	*mg/l*	ND $_{0.00031}$	ND $_{0.00031}$	ND $_{0.00031}$	**NE**
Indeno(1,2,3-cd)pyrene	**EPA 8270**	**193-39-5**	*mg/l*	ND $_{0.000050}$	ND $_{0.000050}$	ND $_{0.000050}$	**NE**
Naphthalene	**EPA 8270**	**91-20-3**	*mg/l*	ND $_{0.0015}$	ND $_{0.0015}$	ND $_{0.0015}$	**NE**
Phenanthrene	**EPA 8270**	**85-01-8**	*mg/l*	ND $_{0.00020}$	ND $_{0.00020}$	ND $_{0.00020}$	**NE**
Pyrene	**EPA 8270**	**129-00-0**	*mg/l*	ND $_{0.00010}$	ND $_{0.00010}$	ND $_{0.00010}$	**NE**
Total PAHs [1]			*mg/l*	ND	ND	ND	**NE**

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific MDL in mg/kg.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
NE - Not established.
[1] - Total PAHs are the sum of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene detections.

Table 2-9
Eastern Drainage Ditch Surface Water Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SW013-F005	ABL-SW014-F005	ABL-SW015-F005	15A NCAC 2B Surface Water Standard
Location						Lower Ditch	Middle Ditch	Upper Ditch	
Date						7/11/2018	7/11/2018	7/11/2018	
Time						13:25	12:50	12:20	
2-MoCB	1	2-Chlorobiphenyl	EPA 1668A	2051-60-7	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3-MoCB	2	3-Chlorobiphenyl	EPA 1668A	2051-61-8	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
4-MoCB	3	4-Chlorobiphenyl	EPA 1668A	2051-62-9	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,2'-DiCB	4	2,2'-Dichlorobiphenyl	EPA 1668A	13029-08-8	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,6-DiCB	10	2,6-Dichlorobiphenyl	EPA 1668A	33146-45-1	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,5-DiCB	9	2,5-Dichlorobiphenyl	EPA 1668A	34883-39-1	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,4-DiCB	7	2,4-Dichlorobiphenyl	EPA 1668A	33284-50-3	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3'-DiCB	6	2,3'-Dichlorobiphenyl	EPA 1668A	25569-80-6	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3-DiCB	5	2,3-Dichlorobiphenyl	EPA 1668A	16605-91-7	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,4'-DiCB	8	2,4'-Dichlorobiphenyl	EPA 1668A	34883-43-7	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,5-DiCB	14	3,5-Dichlorobiphenyl	EPA 1668A	34883-41-5	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,3'-DiCB	11	3,3'-Dichlorobiphenyl	EPA 1668A	2050-67-1	*mg/l*	ND 0.00000256	ND 0.00000262	ND 0.00000254	NE
(12/13)	12/13	NA (Co-elution)	EPA 1668A	E52450566	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
4,4'-DiCB	15	4,4'-Dichlorobiphenyl	EPA 1668A	2050-68-2	*mg/l*	ND 0.000000345	ND 0.000000353	ND 0.000000342	NE
2,2',6-TrCB	19	2,2',6-Trichlorobiphenyl	EPA 1668A	38444-73-4	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
(18/30)	18/30	NA (Co-elution)	EPA 1668A	E52450574	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',4-TrCB	17	2,2',4-Trichlorobiphenyl	EPA 1668A	37680-66-3	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3',6-TrCB	27	2,3',6-Trichlorobiphenyl	EPA 1668A	38444-76-7	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3,6-TrCB	24	2,3,6-Trichlorobiphenyl	EPA 1668A	55702-45-9	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,2',3-TrCB	16	2,2',3-Trichlorobiphenyl	EPA 1668A	38444-78-9	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,4',6-TrCB	32	2,4',6-Trichlorobiphenyl	EPA 1668A	38444-77-8	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3',5'-TrCB	34	2,3',5'-Trichlorobiphenyl	EPA 1668A	37680-68-5	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,3,5-TrCB	23	2,3,5-Trichlorobiphenyl	EPA 1668A	55720-44-0	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
(26/29)	26/29	NA (Co-elution)	EPA 1668A	E52450608	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4-TrCB	25	2,3',4-Trichlorobiphenyl	EPA 1668A	55712-37-3	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
2,4',5-TrCB	31	2,4',5-Trichlorobiphenyl	EPA 1668A	16606-02-3	*mg/l*	ND 0.00000136	ND 0.00000139	ND 0.00000135	NE
(20/28)	20/28	NA (Co-elution)	EPA 1668A	E52450582	*mg/l*	ND 0.00000135	ND 0.00000138	ND 0.00000134	NE
(21/33)	21/33	NA (Co-elution)	EPA 1668A	E52450590	*mg/l*	ND 0.00000141	ND 0.00000144	ND 0.0000014	NE
2,3,4'-TrCB	22	2,3,4'-Trichlorobiphenyl	EPA 1668A	38444-85-8	*mg/l*	ND 0.000000994	ND 0.00000102	ND 0.000000985	NE
3,3',5-TrCB	36	3,3',5-Trichlorobiphenyl	EPA 1668A	38444-87-0	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,4',5-TrCB	39	3,4',5-Trichlorobiphenyl	EPA 1668A	38444-88-1	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,4,5-TrCB	38	3,4,5-Trichlorobiphenyl	EPA 1668A	53555-66-1	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,3',4-TrCB	35	3,3',4-Trichlorobiphenyl	EPA 1668A	37680-69-6	*mg/l*	ND 0.000000261	ND 0.000000267	ND 0.000000259	NE
3,4,4'-TrCB	37	3,4,4'-Trichlorobiphenyl	EPA 1668A	38444-90-5	*mg/l*	ND 0.000000554	ND 0.000000567	ND 0.000000549	NE
2,2',6,6'-TeCB	54	2,2',6,6'-Tetrachlorobiphenyl	EPA 1668A	15968-05-5	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(50/53)	50/53	NA (Co-elution)	EPA 1668A	E52450657	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
(45/51)	45/51	NA (Co-elution)	EPA 1668A	E52450632	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
2,2',3,6'-TeCB	46	2,2',3,6'-Tetrachlorobiphenyl	EPA 1668A	41464-47-5	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',5,5'-TeCB	52	2,2',5,5'-Tetrachlorobiphenyl	EPA 1668A	35693-99-3	*mg/l*	0.00000167	ND 0.00000165	ND 0.0000016	NE
2,3',5',6-TeCB	73	2,3',5',6-Tetrachlorobiphenyl	EPA 1668A	74338-23-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
43/73	43/73	NA (Co-elution)	EPA 1668A		*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(49/69)	49/69	NA (Co-elution)	EPA 1668A	E52450640	*mg/l*	0.00000106	ND 0.00000107	ND 0.00000104	NE
2,2',4,5-TeCB	48	2,2',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-47-9	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(44/47/65)	44/47/65	NA (Co-elution)	EPA 1668A	E52450624	*mg/l*	ND 0.00000157	ND 0.0000016	ND 0.00000155	NE
(59/62/75)	59/62/75	NA (Co-elution)	EPA 1668A	E52450665	*mg/l*	ND 0.00000157	ND 0.0000016	ND 0.00000155	NE
2,2',3,4'-TeCB	42	2,2',3,4'-Tetrachlorobiphenyl	EPA 1668A	36559-22-5	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(40/41/71)	40/41/71	NA (Co-elution)	EPA 1668A	E52450616	*mg/l*	ND 0.00000157	ND 0.0000016	ND 0.00000155	NE
2,3,4',6-TeCB	64	2,3,4',6-Tetrachlorobiphenyl	EPA 1668A	52663-58-8	*mg/l*	0.000000776	0.000000761	0.000000603	NE
2,3',5,5'-TeCB	72	2,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	41464-42-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,5'-TeCB	68	2,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	73575-52-7	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',5-TeCB	57	2,3,3',5-Tetrachlorobiphenyl	EPA 1668A	70424-67-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',5'-TeCB	58	2,3,3',5'-Tetrachlorobiphenyl	EPA 1668A	41464-49-7	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,5-TeCB	67	2,3',4,5-Tetrachlorobiphenyl	EPA 1668A	73575-53-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,4',5-TeCB	63	2,3,4',5-Tetrachlorobiphenyl	EPA 1668A	74472-34-7	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(61/70/74/76)	60/70/74/76	NA (Co-elution)	EPA 1668A	E52450673	*mg/l*	0.00000225	ND 0.00000214	ND 0.00000207	NE
2,3',4,4'-TeCB	66	2,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-10-0	*mg/l*	0.00000146	0.00000139	0.00000108	NE
2,3,3',4-TeCB	55	2,3,3',4-Tetrachlorobiphenyl	EPA 1668A	74338-24-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',4'-TeCB	56	2,3,3',4'-Tetrachlorobiphenyl	EPA 1668A	41464-43-1	*mg/l*	0.00000059	ND 0.000000535	ND 0.000000518	NE
2,3,4,4'-TeCB	60	2,3,4,4'-Tetrachlorobiphenyl	EPA 1668A	33025-41-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,3',5,5'-TeCB	80	3,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	33284-52-5	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,3',4,5'-TeCB	79	3,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	41464-48-6	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,3',4,5-TeCB	78	3,3',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-49-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,4,4',5-TeCB	81	3,4,4',5-Tetrachlorobiphenyl	EPA 1668A	70362-50-4	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,3',4,4'-TeCB	77	3,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-13-3	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',4,6,6'-PeCB	104	2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668A	56558-16-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,6,6'-PeCB	96	2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668A	73575-54-9	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',4,5',6-PeCB	103	2,2',4,5',6-Pentachlorobiphenyl	EPA 1668A	60145-21-3	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,5,6'-PeCB	94	2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668A	73575-55-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,5',6-PeCB	95	2,2',3,5',6-Pentachlorobiphenyl	EPA 1668A	38379-99-6	*mg/l*	ND 0.000000994	ND 0.00000102	ND 0.000000985	NE
(93/98/100/102)	93/98/100/102	NA (Co-elution)	EPA 1668A		*mg/l*	ND 0.00000209	ND 0.00000214	ND 0.00000207	NE
(88/91)	88/91	NA (Co-elution)	EPA 1668A	E52450715	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
2,2',3,3',6-PeCB	84	2,2',3,3',6-Pentachlorobiphenyl	EPA 1668A	52663-60-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4,6'-PeCB	89	2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668A	73575-57-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,5',6-PeCB	121	2,3',4,5',6-Pentachlorobiphenyl	EPA 1668A	56558-18-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,5,5'-PeCB	92	2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668A	52663-61-3	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(90/101/113)	90/101/113	NA (Co-elution)	EPA 1668A	E52450723	*mg/l*	ND 0.00000157	ND 0.0000016	ND 0.00000155	NE
2,2',3,3',5-PeCB	83	2,2',3,3',5-Pentachlorobiphenyl	EPA 1668A	60145-20-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',4,4',5-PeCB	99	2,2',4,4',5-Pentachlorobiphenyl	EPA 1668A	38380-01-7	*mg/l*	0.000000655	0.000000639	ND 0.000000518	NE
2,3,3',5,6-PeCB	112	2,3,3',5,6-Pentachlorobiphenyl	EPA 1668A	74472-36-9	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(86/87/97/108/119/125)	86/87/97/108/119'125	NA (Co-elution)	EPA 1668A	E52450707	*mg/l*	ND 0.00000314	ND 0.00000321	ND 0.00000311	NE
(85/117/116)	85/117/116	NA (Co-elution)	EPA 1668A	E52450699	*mg/l*	ND 0.00000157	ND 0.0000016	ND 0.00000155	NE
(110/115)	110/115	NA (Co-elution)	EPA 1668A	E52450756	*mg/l*	0.0000014	0.00000119	ND 0.00000104	NE
2,2',3,3',4-PeCB	82	2,2',3,3',4-Pentachlorobiphenyl	EPA 1668A	52663-62-4	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',5,5'-PeCB	111	2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668A	39635-32-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,5,5'-PeCB	120	2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	68194-12-7	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(107/124)	107/124	NA (Co-elution)	EPA 1668A	E52450749	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
2,3,3',4,6-PeCB	109	2,3,3',4,6-Pentachlorobiphenyl	EPA 1668A	74472-35-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,4',5'-PeCB	123	2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668A	65510-44-3	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',4,5-PeCB	106	2,3,3',4,5-Pentachlorobiphenyl	EPA 1668A	70424-69-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3',4,4',5-PeCB	118	2,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	31508-00-6	*mg/l*	0.00000104	0.000000864	ND 0.000000663	NE
2,3,3',4',5'-PeCB	122	2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668A	76842-07-4	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,4,4',5-PeCB	114	2,3,4,4',5-Pentachlorobiphenyl	EPA 1668A	74472-37-0	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',4,4'-PeCB	105	2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668A	32598-14-4	*mg/l*	0.000000588	ND 0.000000535	ND 0.000000518	NE
3,3',4,5,5'-PeCB	127	3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	39635-33-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
3,3',4,4',5-PeCB	126	3,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	57465-28-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',4,4',6,6'-HxCB	155	2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668A	33979-03-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,5,6,6'-HxCB	152	2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668A	68194-09-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4',6,6'-HxCB	150	2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668A	68194-08-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,3',6,6'-HxCB	136	2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668A	38411-22-2	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4,6,6'-HxCB	145	2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668A	74472-40-5	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4',5,6'-HxCB	148	2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668A	74472-41-6	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(135/151)	135/151	NA (Co-elution)	EPA 1668A		*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
2,2',4,4',5,6'-HxCB	154	2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668A	60145-22-4	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4,5',6-HxCB	144	2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668A	68194-14-9	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
(147/149)	147/149	NA (Co-elution)	EPA 1668A	E52450814	*mg/l*	ND 0.00000105	0.00000117	ND 0.00000104	NE
(134/143)	134/143	NA (Co-elution)	EPA 1668A	E52450780	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
(139/140)	139/140	NA (Co-elution)	EPA 1668A	E52450806	*mg/l*	ND 0.00000105	ND 0.00000107	ND 0.00000104	NE
2,2',3,3',4,6-HxCB	131	2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668A	61798-70-7	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4,5,6-HxCB	142	2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-61-4	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,3',4,6'-HxCB	132	2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668A	38380-05-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,3',5,5'-HxCB	133	2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668A	35694-04-3	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,3,3',5,5',6-HxCB	165	2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668A	74472-46-1	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE
2,2',3,4',5,5'-HxCB	146	2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	51908-16-8	*mg/l*	ND 0.000000523	ND 0.000000535	ND 0.000000518	NE

Table 2-9
Eastern Drainage Ditch Surface Water Sample Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-SW013-F005	ABL-SW014-F005	ABL-SW015-F005	15A NCAC 2B Surface Water Standard
Location						**Lower Ditch**	**Middle Ditch**	**Upper Ditch**	
Date						**7/11/2018**	**7/11/2018**	**7/11/2018**	
Time						**13:25**	**12:50**	**12:20**	
2,3,3',4,5',6-HxCB	**161**	**2,3,3',4,5',6-Hexachlorobiphenyl**	**EPA 1668A**	**74472-43-8**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(153/168)	**153/168**	**NA (Co-elution)**	**EPA 1668A**	**E52450822**	*mg/l*	0.00000131	0.0000014	ND $_{0.00000104}$	**NE**
2,2',3,4,5,5'-HxCB	**141**	**2,2',3,4,5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52712-04-6**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',4,5'-HxCB	**130**	**2,2',3,3',4,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52663-66-8**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4,4',5-HxCB	**137**	**2,2',3,4,4',5-Hexachlorobiphenyl**	**EPA 1668A**	**35694-06-5**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4',5',6-HxCB	**164**	**2,3,3',4',5',6-Hexachlorobiphenyl**	**EPA 1668A**	**74472-45-0**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(129/138/163)	**129/138/163**	**NA (Co-elution)**	**EPA 1668A**		*mg/l*	ND $_{0.00000157}$	ND $_{0.0000016}$	ND $_{0.00000155}$	**NE**
2,3,3',4,5,6-HxCB	**160**	**2,3,3',4,5,6-Hexachlorobiphenyl**	**EPA 1668A**	**41411-62-5**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4,4',6-HxCB	**158**	**2,3,3',4,4',6-Hexachlorobiphenyl**	**EPA 1668A**	**74472-42-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(128/166)	**128/166**	**NA (Co-elution)**	**EPA 1668A**	**E52450764**	*mg/l*	ND $_{0.00000105}$	ND $_{0.00000107}$	ND $_{0.00000104}$	**NE**
2,3,3',4,5,5'-HxCB	**159**	**2,3,3',4,5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**39635-35-3**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4',5,5'-HxCB	**162**	**2,3,3',4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**39635-34-2**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3',4,4',5,5'-HxCB	**167**	**2,3',4,4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**52663-72-6**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(156/157)	**156/157**	**NA (Co-elution)**	**EPA 1668A**	**E52450830**	*mg/l*	ND $_{0.00000105}$	ND $_{0.00000107}$	ND $_{0.00000104}$	**NE**
3,3',4,4',5,5'-HxCB	**169**	**3,3',4,4',5,5'-Hexachlorobiphenyl**	**EPA 1668A**	**32774-16-6**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4',5,6,6'-HpCB	**188**	**2,2',3,4',5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74487-85-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',5,6,6'-HpCB	**179**	**2,2',3,3',5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-64-6**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4,4',6,6'-HpCB	**184**	**2,2',3,4,4',6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74472-48-3**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',4,6,6'-HpCB	**176**	**2,2',3,3',4,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-65-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4,5,6,6'-HpCB	**186**	**2,2',3,4,5,6,6'-Heptachlorobiphenyl**	**EPA 1668A**	**74472-49-4**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',5,5',6-HpCB	**178**	**2,2',3,3',5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**52663-67-9**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',4,5',6-HpCB	**175**	**2,2',3,3',4,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**40186-70-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4',5,5',6-HpCB	**187**	**2,2',3,4',5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**52663-68-0**	*mg/l*	0.000000694	0.000000806	0.000000526	**NE**
2,2',3,4,4',5,6'-HpCB	**182**	**2,2',3,4,4',5,6'-Heptachlorobiphenyl**	**EPA 1668A**	**60145-23-5**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(183/185)	**183/185**	**NA (Co-elution)**	**EPA 1668A**	**E52450863**	*mg/l*	ND $_{0.00000105}$	ND $_{0.00000107}$	ND $_{0.00000104}$	**NE**
2,2',3,3',4,5,6'-HpCB	**174**	**2,2',3,3',4,5,6'-Heptachlorobiphenyl**	**EPA 1668A**	**38411-25-5**	*mg/l*	0.000000569	0.000000648	ND $_{0.000000518}$	**NE**
2,2',3,3',4,5',6'-HpCB	**177**	**2,2',3,3',4,5',6'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-70-4**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,4,4',5,6-HpCB	**181**	**2,2',3,4,4',5,6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-47-2**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(171/173)	**171/173**	**NA (Co-elution)**	**EPA 1668A**	**E52450848**	*mg/l*	ND $_{0.00000105}$	ND $_{0.00000107}$	ND $_{0.00000104}$	**NE**
2,2',3,3',4,5,5'-HpCB	**172**	**2,2',3,3',4,5,5'-Heptachlorobiphenyl**	**EPA 1668A**	**52663-74-8**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4,5,5',6-HpCB	**192**	**2,3,3',4,5,5',6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-51-8**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
(180/193)	**180/193**	**NA (Co-elution)**	**EPA 1668A**	**E52450855**	*mg/l*	0.00000117	0.00000133	ND $_{0.00000104}$	**NE**
2,3,3',4,4',5',6-HpCB	**191**	**2,3,3',4,4',5',6-Heptachlorobiphenyl**	**EPA 1668A**	**74472-50-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',4,4',5-HpCB	**170**	**2,2',3,3',4,4',5-Heptachlorobiphenyl**	**EPA 1668A**	**35065-30-6**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4,4',5,6-HpCB	**190**	**2,3,3',4,4',5,6-Heptachlorobiphenyl**	**EPA 1668A**	**41411-64-7**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,3,3',4,4',5,5'-HpCB	**189**	**2,3,3',4,4',5,5'-Heptachlorobiphenyl**	**EPA 1668A**	**39635-31-9**	*mg/l*	ND $_{0.000000523}$	ND $_{0.000000535}$	ND $_{0.000000518}$	**NE**
2,2',3,3',5,5',6,6'-OcCB	**202**	**2,2',3,3',5,5',6,6'-Octachlorobiphenyl**	**EPA 1668A**	**2136-99-4**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,5',6,6'-OcCB	**201**	**2,2',3,3',4,5',6,6'-Octachlorobiphenyl**	**EPA 1668A**	**40186-71-8**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,4,4',5,6,6'-OcCB	**204**	**2,2',3,4,4',5,6,6'-Octachlorobiphenyl**	**EPA 1668A**	**74472-52-9**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
(197/200)	**197/200**	**NA (Co-elution)**	**EPA 1668A**	**E52450871**	*mg/l*	ND $_{0.00000157}$	ND $_{0.0000016}$	ND $_{0.00000155}$	**NE**
(198/199)	**198/199**	**NA (Co-elution)**	**EPA 1668A**	**E52450889**	*mg/l*	ND $_{0.00000157}$	ND $_{0.0000016}$	ND $_{0.00000155}$	**NE**
2,2',3,3',4,4',5,6'-OcCB	**196**	**2,2',3,3',4,4',5,6'-Octachlorobiphenyl**	**EPA 1668A**	**42740-50-1**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,4,4',5,5',6-OcCB	**203**	**2,2',3,4,4',5,5',6-Octachlorobiphenyl**	**EPA 1668A**	**52663-76-0**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,4',5,6-OcCB	**195**	**2,2',3,3',4,4',5,6-Octachlorobiphenyl**	**EPA 1668A**	**52663-78-2**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,4',5,5'-OcCB	**194**	**2,2',3,3',4,4',5,5'-Octachlorobiphenyl**	**EPA 1668A**	**35694-08-7**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,3,3',4,4',5,5',6-OcCB	**205**	**2,3,3',4,4',5,5',6-Octachlorobiphenyl**	**EPA 1668A**	**74472-53-0**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,5,5',6,6'-NoCB	**208**	**2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl**	**EPA 1668A**	**52663-77-1**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,4',5,6,6'-NoCB	**207**	**2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl**	**EPA 1668A**	**52663-79-3**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
2,2',3,3',4,4',5,5',6-NoCB	**206**	**2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl**	**EPA 1668A**	**40186-72-9**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
Decachlorobiphenyl	**209**	**Decachlorobiphenyl**	**EPA 1668A**	**2051-24-3**	*mg/l*	ND $_{0.000000784}$	ND $_{0.000000802}$	ND $_{0.000000777}$	**NE**
Total Polychlorinated Biphenyls				**1336-36-3**	*mg/l*	**0.000015232**	**0.000010198**	**0.000002209**	**0.000001**

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific Method Specified Reporting Limit (EML) in mg/kg.
NE - Not established.

Table 2-10
Equipment Blank Analytical Results
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-EB001-F005
Location				**Equipment Blank**
Date				**7/11/2018**
Time				**14:10**
PCB-1016 (Aroclor 1016)	**EPA 8082**	**12674-11-2**	*mg/L*	ND $_{0.00042}$
PCB-1221 (Aroclor 1221)	**EPA 8082**	**11104-28-2**	*mg/L*	ND $_{0.00042}$
PCB-1232 (Aroclor 1232)	**EPA 8082**	**11141-16-5**	*mg/L*	ND $_{0.00042}$
PCB-1242 (Aroclor 1242)	**EPA 8082**	**53469-21-9**	*mg/L*	ND $_{0.00042}$
PCB-1248 (Aroclor 1248)	**EPA 8082**	**12672-29-6**	*mg/L*	ND $_{0.00042}$
PCB-1254 (Aroclor 1254)	**EPA 8082**	**11097-69-1**	*mg/L*	ND $_{0.00042}$
PCB-1260 (Aroclor 1260)	**EPA 8082**	**11096-82-5**	*mg/L*	ND $_{0.00042}$
Total Polychlorinated Biphenyls				ND
1-Methylnaphthalene	**EPA 8270**	**90-12-0**	*mg/L*	ND $_{0.0020}$
2-Methylnaphthalene	**EPA 8270**	**91-57-6**	*mg/L*	ND $_{0.0020}$
Acenaphthene	**EPA 8270**	**83-32-9**	*mg/L*	ND $_{0.00050}$
Acenaphthylene	**EPA 8270**	**208-96-8**	*mg/L*	ND $_{0.00050}$
Anthracene	**EPA 8270**	**120-12-7**	*mg/L*	ND $_{0.000050}$
Benzo(a)anthracene	**EPA 8270**	**56-55-3**	*mg/L*	ND $_{0.000050}$
Benzo(a)pyrene	**EPA 8270**	**50-32-8**	*mg/L*	ND $_{0.00010}$
Benzo(b)fluoranthene	**EPA 8270**	**205-99-2**	*mg/L*	ND $_{0.000050}$
Benzo(g,h,i)perylene	**EPA 8270**	**191-24-2**	*mg/L*	ND $_{0.00020}$
Benzo(k)fluoranthene	**EPA 8270**	**207-08-9**	*mg/L*	ND $_{0.00020}$
Chrysene	**EPA 8270**	**218-01-9**	*mg/L*	ND $_{0.00010}$
Dibenz(a,h)anthracene	**EPA 8270**	**53-70-3**	*mg/L*	ND $_{0.00015}$
Fluoranthene	**EPA 8270**	**206-44-0**	*mg/L*	ND $_{0.00030}$
Fluorene	**EPA 8270**	**86-73-7**	*mg/L*	ND $_{0.00031}$
Indeno(1,2,3-cd)pyrene	**EPA 8270**	**193-39-5**	*mg/L*	ND $_{0.000050}$
Naphthalene	**EPA 8270**	**91-20-3**	*mg/L*	ND $_{0.0015}$
Phenanthrene	**EPA 8270**	**85-01-8**	*mg/L*	ND $_{0.00020}$
Pyrene	**EPA 8270**	**129-00-0**	*mg/L*	ND $_{0.00010}$

ND - The analyte was not detected above laboratory detection limits.
Subscript indicates compound-specific MDL in mg/l.

Table 2-11
Equipment Blank Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-EB001-F005
Location						Equipment Blank
Date						7/11/2018
Time						14:10
2-MoCB	1	2-Chlorobiphenyl	EPA 1668A	2051-60-7	mg/l	ND 0.00000025
3-MoCB	2	3-Chlorobiphenyl	EPA 1668A	2051-61-8	mg/l	ND 0.00000025
4-MoCB	3	4-Chlorobiphenyl	EPA 1668A	2051-62-9	mg/l	ND 0.00000025
2,2'-DiCB	4	2,2'-Dichlorobiphenyl	EPA 1668A	13029-08-8	mg/l	ND 0.00000025
2,6-DiCB	10	2,6-Dichlorobiphenyl	EPA 1668A	33146-45-1	mg/l	ND 0.00000025
2,5-DiCB	9	2,5-Dichlorobiphenyl	EPA 1668A	34883-39-1	mg/l	ND 0.00000025
2,4-DiCB	7	2,4-Dichlorobiphenyl	EPA 1668A	33284-50-3	mg/l	ND 0.00000025
2,3'-DiCB	6	2,3'-Dichlorobiphenyl	EPA 1668A	25569-80-6	mg/l	ND 0.00000025
2,3-DiCB	5	2,3-Dichlorobiphenyl	EPA 1668A	16605-91-7	mg/l	ND 0.00000025
2,4'-DiCB	8	2,4'-Dichlorobiphenyl	EPA 1668A	34883-43-7	mg/l	ND 0.00000025
3,5-DiCB	14	3,5-Dichlorobiphenyl	EPA 1668A	34883-41-5	mg/l	ND 0.00000025
3,3'-DiCB	11	3,3'-Dichlorobiphenyl	EPA 1668A	2050-67-1	mg/l	ND 0.00000245
(12/13)	12/13	NA (Co-elution)	EPA 1668A	E52450566	mg/l	ND 0.0000005
4,4'-DiCB	15	4,4'-Dichlorobiphenyl	EPA 1668A	2050-68-2	mg/l	ND 0.00000033
2,2',6-TrCB	19	2,2',6-Trichlorobiphenyl	EPA 1668A	38444-73-4	mg/l	ND 0.00000025
(18/30)	18/30	NA (Co-elution)	EPA 1668A	E52450574	mg/l	ND 0.0000005
2,2',4-TrCB	17	2,2',4-Trichlorobiphenyl	EPA 1668A	37680-66-3	mg/l	ND 0.00000025
2,3',6-TrCB	27	2,3',6-Trichlorobiphenyl	EPA 1668A	38444-76-7	mg/l	ND 0.00000025
2,3,6-TrCB	24	2,3,6-Trichlorobiphenyl	EPA 1668A	55702-45-9	mg/l	ND 0.00000025
2,2',3-TrCB	16	2,2',3-Trichlorobiphenyl	EPA 1668A	38444-78-9	mg/l	ND 0.00000025
2,4',6-TrCB	32	2,4',6-Trichlorobiphenyl	EPA 1668A	38444-77-8	mg/l	ND 0.00000025
2,3',5'-TrCB	34	2,3',5'-Trichlorobiphenyl	EPA 1668A	37680-68-5	mg/l	ND 0.00000025
2,3,5-TrCB	23	2,3,5-Trichlorobiphenyl	EPA 1668A	55720-44-0	mg/l	ND 0.00000025
(26/29)	26/29	NA (Co-elution)	EPA 1668A	E52450608	mg/l	ND 0.0000005
2,3',4-TrCB	25	2,3',4-Trichlorobiphenyl	EPA 1668A	55712-37-3	mg/l	ND 0.00000025
2,4',5-TrCB	31	2,4',5-Trichlorobiphenyl	EPA 1668A	16606-02-3	mg/l	ND 0.0000013
(20/28)	20/28	NA (Co-elution)	EPA 1668A	E52450582	mg/l	ND 0.00000129
(21/33)	21/33	NA (Co-elution)	EPA 1668A	E52450590	mg/l	ND 0.00000135
2,3,4'-TrCB	22	2,3,4'-Trichlorobiphenyl	EPA 1668A	38444-85-8	mg/l	ND 0.00000095
3,3',5-TrCB	36	3,3',5-Trichlorobiphenyl	EPA 1668A	38444-87-0	mg/l	ND 0.00000025
3,4',5-TrCB	39	3,4',5-Trichlorobiphenyl	EPA 1668A	38444-88-1	mg/l	ND 0.00000025
3,4,5-TrCB	38	3,4,5-Trichlorobiphenyl	EPA 1668A	53555-66-1	mg/l	ND 0.00000025
3,3',4-TrCB	35	3,3',4-Trichlorobiphenyl	EPA 1668A	37680-69-6	mg/l	ND 0.00000025
3,4,4'-TrCB	37	3,4,4'-Trichlorobiphenyl	EPA 1668A	38444-90-5	mg/l	ND 0.00000053
2,2',6,6'-TeCB	54	2,2',6,6'-Tetrachlorobiphenyl	EPA 1668A	15968-05-5	mg/l	ND 0.0000005
(50/53)	50/53	NA (Co-elution)	EPA 1668A	E52450657	mg/l	ND 0.000001
(45/51)	45/51	NA (Co-elution)	EPA 1668A	E52450632	mg/l	ND 0.000001
2,2',3,6'-TeCB	46	2,2',3,6'-Tetrachlorobiphenyl	EPA 1668A	41464-47-5	mg/l	ND 0.0000005
2,2',5,5'-TeCB	52	2,2',5,5'-Tetrachlorobiphenyl	EPA 1668A	35693-99-3	mg/l	ND 0.00000154
2,3',5',6-TeCB	73	2,3',5',6-Tetrachlorobiphenyl	EPA 1668A	74338-23-1	mg/l	ND 0.0000005
43/73	43/73	NA (Co-elution)	EPA 1668A		mg/l	ND 0.0000005
(49/69)	49/69	NA (Co-elution)	EPA 1668A	E52450640	mg/l	ND 0.000001
2,2',4,5-TeCB	48	2,2',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-47-9	mg/l	ND 0.0000005
(44/47/65)	44/47/65	NA (Co-elution)	EPA 1668A	E52450624	mg/l	ND 0.0000015
(59/62/75)	59/62/75	NA (Co-elution)	EPA 1668A	E52450665	mg/l	ND 0.0000015
2,2',3,4'-TeCB	42	2,2',3,4'-Tetrachlorobiphenyl	EPA 1668A	36559-22-5	mg/l	ND 0.0000005
(40/41/71)	40/41/71	NA (Co-elution)	EPA 1668A	E52450616	mg/l	ND 0.0000015
2,3,4',6-TeCB	64	2,3,4',6-Tetrachlorobiphenyl	EPA 1668A	52663-58-8	mg/l	ND 0.0000005
2,3',5,5'-TeCB	72	2,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	41464-42-0	mg/l	ND 0.0000005
2,3',4,5'-TeCB	68	2,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	73575-52-7	mg/l	ND 0.0000005
2,3,3',5-TeCB	57	2,3,3',5-Tetrachlorobiphenyl	EPA 1668A	70424-67-8	mg/l	ND 0.0000005
2,3,3',5'-TeCB	58	2,3,3',5'-Tetrachlorobiphenyl	EPA 1668A	41464-49-7	mg/l	ND 0.0000005
2,3',4,5-TeCB	67	2,3',4,5-Tetrachlorobiphenyl	EPA 1668A	73575-53-8	mg/l	ND 0.0000005
2,3,4',5-TeCB	63	2,3,4',5-Tetrachlorobiphenyl	EPA 1668A	74472-34-7	mg/l	ND 0.0000005
(61/70/74/76)	60/70/74/76	NA (Co-elution)	EPA 1668A	E52450673	mg/l	ND 0.000002
2,3',4,4'-TeCB	66	2,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-10-0	mg/l	ND 0.00000084
2,3,3',4-TeCB	55	2,3,3',4-Tetrachlorobiphenyl	EPA 1668A	74338-24-2	mg/l	ND 0.0000005
2,3,3',4'-TeCB	56	2,3,3',4'-Tetrachlorobiphenyl	EPA 1668A	41464-43-1	mg/l	ND 0.0000005
2,3,4,4'-TeCB	60	2,3,4,4'-Tetrachlorobiphenyl	EPA 1668A	33025-41-1	mg/l	ND 0.0000005
3,3',5,5'-TeCB	80	3,3',5,5'-Tetrachlorobiphenyl	EPA 1668A	33284-52-5	mg/l	ND 0.0000005
3,3',4,5'-TeCB	79	3,3',4,5'-Tetrachlorobiphenyl	EPA 1668A	41464-48-6	mg/l	ND 0.0000005
3,3',4,5-TeCB	78	3,3',4,5-Tetrachlorobiphenyl	EPA 1668A	70362-49-1	mg/l	ND 0.0000005
3,4,4',5-TeCB	81	3,4,4',5-Tetrachlorobiphenyl	EPA 1668A	70362-50-4	mg/l	ND 0.0000005
3,3',4,4'-TeCB	77	3,3',4,4'-Tetrachlorobiphenyl	EPA 1668A	32598-13-3	mg/l	ND 0.0000005
2,2',4,6,6'-PeCB	104	2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668A	56558-16-8	mg/l	ND 0.0000005
2,2',3,6,6'-PeCB	96	2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668A	73575-54-9	mg/l	ND 0.0000005
2,2',4,5',6-PeCB	103	2,2',4,5',6-Pentachlorobiphenyl	EPA 1668A	60145-21-3	mg/l	ND 0.0000005
2,2',3,5,6'-PeCB	94	2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668A	73575-55-0	mg/l	ND 0.0000005
2,2',3,5',6-PeCB	95	2,2',3,5',6-Pentachlorobiphenyl	EPA 1668A	38379-99-6	mg/l	ND 0.00000095
(93/98/100/102)	93/98/100/102	NA (Co-elution)	EPA 1668A		mg/l	ND 0.000002
(88/91)	88/91	NA (Co-elution)	EPA 1668A	E52450715	mg/l	ND 0.000001
2,2',3,3',6-PeCB	84	2,2',3,3',6-Pentachlorobiphenyl	EPA 1668A	52663-60-2	mg/l	ND 0.0000005
2,2',3,4,6'-PeCB	89	2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668A	73575-57-2	mg/l	ND 0.0000005
2,3',4,5',6-PeCB	121	2,3',4,5',6-Pentachlorobiphenyl	EPA 1668A	56558-18-0	mg/l	ND 0.0000005
2,2',3,5,5'-PeCB	92	2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668A	52663-61-3	mg/l	ND 0.0000005
(90/101/113)	90/101/113	NA (Co-elution)	EPA 1668A	E52450723	mg/l	ND 0.0000015
2,2',3,3',5-PeCB	83	2,2',3,3',5-Pentachlorobiphenyl	EPA 1668A	60145-20-2	mg/l	ND 0.0000005
2,2',4,4',5-PeCB	99	2,2',4,4',5-Pentachlorobiphenyl	EPA 1668A	38380-01-7	mg/l	ND 0.0000005
2,3,3',5,6-PeCB	112	2,3,3',5,6-Pentachlorobiphenyl	EPA 1668A	74472-36-9	mg/l	ND 0.0000005
(86/87/97/108/119/125)	86/87/97/108/119'125	NA (Co-elution)	EPA 1668A	E52450707	mg/l	ND 0.000003
(85/117/116)	85/117/116	NA (Co-elution)	EPA 1668A	E52450699	mg/l	ND 0.0000015
(110/115)	110/115	NA (Co-elution)	EPA 1668A	E52450756	mg/l	ND 0.000001
2,2',3,3',4-PeCB	82	2,2',3,3',4-Pentachlorobiphenyl	EPA 1668A	52663-62-4	mg/l	ND 0.0000005
2,3,3',5,5'-PeCB	111	2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668A	39635-32-0	mg/l	ND 0.0000005
2,3',4,5,5'-PeCB	120	2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	68194-12-7	mg/l	ND 0.0000005
(107/124)	107/124	NA (Co-elution)	EPA 1668A	E52450749	mg/l	ND 0.000001
2,3,3',4,6-PeCB	109	2,3,3',4,6-Pentachlorobiphenyl	EPA 1668A	74472-35-8	mg/l	ND 0.0000005
2,3',4,4',5'-PeCB	123	2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668A	65510-44-3	mg/l	ND 0.0000005
2,3,3',4,5-PeCB	106	2,3,3',4,5-Pentachlorobiphenyl	EPA 1668A	70424-69-0	mg/l	ND 0.0000005
2,3',4,4',5-PeCB	118	2,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	31508-00-6	mg/l	ND 0.00000064
2,3,3',4',5'-PeCB	122	2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668A	76842-07-4	mg/l	ND 0.0000005
2,3,4,4',5-PeCB	114	2,3,4,4',5-Pentachlorobiphenyl	EPA 1668A	74472-37-0	mg/l	ND 0.0000005
2,3,3',4,4'-PeCB	105	2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668A	32598-14-4	mg/l	ND 0.0000005

Table 2-11
Equipment Blank Analytical Results - Congener Analysis
Alcoa/Badin Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Congener Number	IUPAC Name	Method	CAS	Units	ABL-EB001-F005
Location						Equipment Blank
Date						7/11/2018
Time						14:10
3,3',4,5,5'-PeCB	127	3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	39635-33-1	*mg/l*	ND $_{0.0000005}$
3,3',4,4',5-PeCB	126	3,3',4,4',5-Pentachlorobiphenyl	EPA 1668A	57465-28-8	*mg/l*	ND $_{0.0000005}$
2,2',4,4',6,6'-HxCB	155	2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668A	33979-03-2	*mg/l*	ND $_{0.0000005}$
2,2',3,5,6,6'-HxCB	152	2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668A	68194-09-2	*mg/l*	ND $_{0.0000005}$
2,2',3,4',6,6'-HxCB	150	2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668A	68194-08-1	*mg/l*	ND $_{0.0000005}$
2,2',3,3',6,6'-HxCB	136	2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668A	38411-22-2	*mg/l*	ND $_{0.0000005}$
2,2',3,4,6,6'-HxCB	145	2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668A	74472-40-5	*mg/l*	ND $_{0.0000005}$
2,2',3,4',5,6'-HxCB	148	2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668A	74472-41-6	*mg/l*	ND $_{0.0000005}$
(135/151)	135/151	NA (Co-elution)	EPA 1668A		*mg/l*	ND $_{0.000001}$
2,2',4,4',5,6'-HxCB	154	2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668A	60145-22-4	*mg/l*	ND $_{0.0000005}$
2,2',3,4,5',6-HxCB	144	2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668A	68194-14-9	*mg/l*	ND $_{0.0000005}$
(147/149)	147/149	NA (Co-elution)	EPA 1668A	E52450814	*mg/l*	ND $_{0.000001}$
(134/143)	134/143	NA (Co-elution)	EPA 1668A	E52450780	*mg/l*	ND $_{0.000001}$
(139/140)	139/140	NA (Co-elution)	EPA 1668A	E52450806	*mg/l*	ND $_{0.000001}$
2,2',3,3',4,6-HxCB	131	2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668A	61798-70-7	*mg/l*	ND $_{0.0000005}$
2,2',3,4,5,6-HxCB	142	2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-61-4	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,6'-HxCB	132	2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668A	38380-05-1	*mg/l*	ND $_{0.0000005}$
2,2',3,3',5,5'-HxCB	133	2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668A	35694-04-3	*mg/l*	ND $_{0.0000005}$
2,3,3',5,5',6-HxCB	165	2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668A	74472-46-1	*mg/l*	ND $_{0.0000005}$
2,2',3,4',5,5'-HxCB	146	2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	51908-16-8	*mg/l*	ND $_{0.0000005}$
2,3,3',4,5',6-HxCB	161	2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668A	74472-43-8	*mg/l*	ND $_{0.0000005}$
(153/168)	153/168	NA (Co-elution)	EPA 1668A	E52450822	*mg/l*	ND $_{0.000001}$
2,2',3,4,5,5'-HxCB	141	2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668A	52712-04-6	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,5'-HxCB	130	2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668A	52663-66-8	*mg/l*	ND $_{0.0000005}$
2,2',3,4,4',5-HxCB	137	2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668A	35694-06-5	*mg/l*	ND $_{0.0000005}$
2,3,3',4',5',6-HxCB	164	2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668A	74472-45-0	*mg/l*	ND $_{0.0000005}$
(129/138/163)	129/138/163	NA (Co-elution)	EPA 1668A		*mg/l*	ND $_{0.0000015}$
2,3,3',4,5,6-HxCB	160	2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668A	41411-62-5	*mg/l*	ND $_{0.0000005}$
2,3,3',4,4',6-HxCB	158	2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668A	74472-42-7	*mg/l*	ND $_{0.0000005}$
(128/166)	128/166	NA (Co-elution)	EPA 1668A	E52450764	*mg/l*	ND $_{0.000001}$
2,3,3',4,5,5'-HxCB	159	2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668A	39635-35-3	*mg/l*	ND $_{0.0000005}$
2,3,3',4',5,5'-HxCB	162	2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668A	39635-34-2	*mg/l*	ND $_{0.0000005}$
2,3',4,4',5,5'-HxCB	167	2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	52663-72-6	*mg/l*	ND $_{0.0000005}$
(156/157)	156/157	NA (Co-elution)	EPA 1668A	E52450830	*mg/l*	ND $_{0.000001}$
3,3',4,4',5,5'-HxCB	169	3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668A	32774-16-6	*mg/l*	ND $_{0.0000005}$
2,2',3,4',5,6,6'-HpCB	188	2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668A	74487-85-7	*mg/l*	ND $_{0.0000005}$
2,2',3,3',5,6,6'-HpCB	179	2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-64-6	*mg/l*	ND $_{0.0000005}$
2,2',3,4,4',6,6'-HpCB	184	2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668A	74472-48-3	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,6,6'-HpCB	176	2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668A	52663-65-7	*mg/l*	ND $_{0.0000005}$
2,2',3,4,5,6,6'-HpCB	186	2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668A	74472-49-4	*mg/l*	ND $_{0.0000005}$
2,2',3,3',5,5',6-HpCB	178	2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-67-9	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,5',6-HpCB	175	2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668A	40186-70-7	*mg/l*	ND $_{0.0000005}$
2,2',3,4',5,5',6-HpCB	187	2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668A	52663-68-0	*mg/l*	ND $_{0.0000005}$
2,2',3,4,4',5,6'-HpCB	182	2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668A	60145-23-5	*mg/l*	ND $_{0.0000005}$
(183/185)	183/185	NA (Co-elution)	EPA 1668A	E52450863	*mg/l*	ND $_{0.000001}$
2,2',3,3',4,5,6'-HpCB	174	2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668A	38411-25-5	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,5',6'-HpCB	177	2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668A	52663-70-4	*mg/l*	ND $_{0.0000005}$
2,2',3,4,4',5,6-HpCB	181	2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668A	74472-47-2	*mg/l*	ND $_{0.0000005}$
(171/173)	171/173	NA (Co-elution)	EPA 1668A	E52450848	*mg/l*	ND $_{0.000001}$
2,2',3,3',4,5,5'-HpCB	172	2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668A	52663-74-8	*mg/l*	ND $_{0.0000005}$
2,3,3',4,5,5',6-HpCB	192	2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668A	74472-51-8	*mg/l*	ND $_{0.0000005}$
(180/193)	180/193	NA (Co-elution)	EPA 1668A	E52450855	*mg/l*	ND $_{0.000001}$
2,3,3',4,4',5',6-HpCB	191	2,3,3',4,4',5',6-Heptachlorobiphenyl	EPA 1668A	74472-50-7	*mg/l*	ND $_{0.0000005}$
2,2',3,3',4,4',5-HpCB	170	2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668A	35065-30-6	*mg/l*	ND $_{0.0000005}$
2,3,3',4,4',5,6-HpCB	190	2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668A	41411-64-7	*mg/l*	ND $_{0.0000005}$
2,3,3',4,4',5,5'-HpCB	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668A	39635-31-9	*mg/l*	ND $_{0.0000005}$
2,2',3,3',5,5',6,6'-OcCB	202	2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668A	2136-99-4	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,5',6,6'-OcCB	201	2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668A	40186-71-8	*mg/l*	ND $_{0.00000075}$
2,2',3,4,4',5,6,6'-OcCB	204	2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668A	74472-52-9	*mg/l*	ND $_{0.00000075}$
(197/200)	197/200	NA (Co-elution)	EPA 1668A	E52450871	*mg/l*	ND $_{0.0000015}$
(198/199)	198/199	NA (Co-elution)	EPA 1668A	E52450889	*mg/l*	ND $_{0.0000015}$
2,2',3,3',4,4',5,6'-OcCB	196	2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668A	42740-50-1	*mg/l*	ND $_{0.00000075}$
2,2',3,4,4',5,5',6-OcCB	203	2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	52663-76-0	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,4',5,6-OcCB	195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668A	52663-78-2	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,4',5,5'-OcCB	194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668A	35694-08-7	*mg/l*	ND $_{0.00000075}$
2,3,3',4,4',5,5',6-OcCB	205	2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668A	74472-53-0	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,5,5',6,6'-NoCB	208	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668A	52663-77-1	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,4',5,6,6'-NoCB	207	2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668A	52663-79-3	*mg/l*	ND $_{0.00000075}$
2,2',3,3',4,4',5,5',6-NoCB	206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668A	40186-72-9	*mg/l*	ND $_{0.00000075}$
Decachlorobiphenyl	209	Decachlorobiphenyl	EPA 1668A	2051-24-3	*mg/l*	ND $_{0.00000075}$
Total Polychlorinated Biphenyls				1336-36-3	*mg/l*	ND

ND - The analyte was not detected above laboratory detection limits. Subscript indicates compound-specific Method Specified Reporting Limit (EML) in mg/l.

Table 2-12
Trip Blank Analytical Results
Alcoa/Badin Municipal Landfill
Badin Business Park Facility
Badin, North Carolina

Sample ID	Method	CAS	Units	ABL-TB001-F005
Location				**Trip Blank**
Date				**7/12/2018**
1,1,1-Trichloroethane	**EPA 624**	**71-55-6**	*mg/l*	ND $_{0.0019}$
1,1,2,2-Tetrachloroethane	**EPA 624**	**79-34-5**	*mg/l*	ND $_{0.0015}$
1,1,2-Trichloroethane	**EPA 624**	**79-00-5**	*mg/l*	ND $_{0.0017}$
1,1-Dichloroethane	**EPA 624**	**75-34-3**	*mg/l*	ND $_{0.0018}$
1,1-Dichloroethene	**EPA 624**	**75-35-4**	*mg/l*	ND $_{0.0019}$
1,2,4-Trichlorobenzene	**EPA 624**	**120-82-1**	*mg/l*	ND $_{0.0017}$
1,2-Dichlorobenzene	**EPA 624**	**95-50-1**	*mg/l*	ND $_{0.0015}$
1,2-Dichloroethane	**EPA 624**	**107-06-2**	*mg/l*	ND $_{0.0018}$
1,2-Dichloropropane	**EPA 624**	**78-87-5**	*mg/l*	ND $_{0.0017}$
1,3-Dichlorobenzene	**EPA 624**	**541-73-1**	*mg/l*	ND $_{0.0015}$
1,4-Dichlorobenzene	**EPA 624**	**106-46-7**	*mg/l*	ND $_{0.0015}$
2-Chloroethylvinyl ether	**EPA 624**	**110-75-8**	*mg/l*	ND $_{0.0022}$
Acrolein	**EPA 624**	**107-02-8**	*mg/l*	ND $_{0.0010}$
Acrylonitrile	**EPA 624**	**107-13-1**	*mg/l*	ND $_{0.0115}$
Benzene	**EPA 624**	**71-43-2**	*mg/l*	ND $_{0.0017}$
Bromodichloromethane	**EPA 624**	**75-27-4**	*mg/l*	ND $_{0.0017}$
Bromoform	**EPA 624**	**75-25-2**	*mg/l*	ND $_{0.0015}$
Bromomethane	**EPA 624**	**74-83-9**	*mg/l*	ND $_{0.0010}$
Carbon tetrachloride	**EPA 624**	**56-23-5**	*mg/l*	ND $_{0.0019}$
Chlorobenzene	**EPA 624**	**108-90-7**	*mg/l*	ND $_{0.0017}$
Chloroethane	**EPA 624**	**75-00-3**	*mg/l*	ND $_{0.0016}$
Chloroform	**EPA 624**	**67-66-3**	*mg/l*	ND $_{0.0019}$
Chloromethane	**EPA 624**	**74-87-3**	*mg/l*	ND $_{0.0015}$
cis-1,3-Dichloropropene	**EPA 624**	**10061-01-5**	*mg/l*	ND $_{0.0016}$
Dibromochloromethane	**EPA 624**	**124-48-1**	*mg/l*	ND $_{0.0018}$
Ethylbenzene	**EPA 624**	**100-41-4**	*mg/l*	ND $_{0.0016}$
Methylene Chloride	**EPA 624**	**75-09-2**	*mg/l*	ND $_{0.0019}$
Tetrachloroethene	**EPA 624**	**127-18-4**	*mg/l*	ND $_{0.0018}$
Toluene	**EPA 624**	**108-88-3**	*mg/l*	ND $_{0.0016}$
trans-1,2-Dichloroethene	**EPA 624**	**156-60-5**	*mg/l*	ND $_{0.0018}$
trans-1,3-Dichloropropene	**EPA 624**	**10061-02-6**	*mg/l*	ND $_{0.0016}$
Trichloroethene	**EPA 624**	**79-01-6**	*mg/l*	ND $_{0.0018}$
Trichlorofluoromethane	**EPA 624**	**75-69-4**	*mg/l*	ND $_{0.0017}$
Vinyl chloride	**EPA 624**	**75-01-4**	*mg/l*	ND $_{0.0015}$

ND - The analyte was not detected above laboratory detection limits.
Subscript indicates compound-specific MDL in mg/l.

3.0 CONCLUSIONS

Results from the field activities developed to meet objectives outlined under Subtask 1, Surface Water Assessment as defined in the April 2, 2018 revised Work Plan are detailed below.

Objective - Determine the contribution of cyanide and fluoride compounds from the Eastern Drainage Ditch to Little Mountain Creek:

- Neither cyanide or fluoride were detected in excess of regulatory standards in Little Mountain Creek surface water samples. While cyanide concentrations were reported below laboratory detection limits, fluoride concentrations were reported as estimated results and varied little from upstream to downstream.

- Both fluoride and cyanide were detected above regulatory levels in surface water samples collected from the upper and middle sections of the Eastern Drainage Ditch; however, fluoride was reported below the regulatory standard in the surface water samples collected from the lower section of Eastern Drainage Ditch. Concentrations of fluoride were greatest near the landfill; whereas, cyanide concentrations increased nearer to Little Mountain Creek.

Objective - Examine the potential source of the PCBs and PAHs in and adjacent to the Eastern Drainage Ditch:

- Concentrations of PAHs above regulatory levels were detected in one sediment sample collected from the middle section of the Eastern Drainage Ditch. Sediment samples from the upper and lower sections of the Eastern Drainage Ditch did not contain concentrations of PAHs above regulatory levels, indicating the extent of PAHs in sediments is limited. No surface water sample from the Eastern Drainage Ditch contained a detection of PAHs above laboratory detection limits.

- The sum of PCB congener concentrations in sediment samples collected from the middle and lower sections of the Eastern Drainage Ditch were greater than the respective screening level. The sediment sample collected from the upper section contained a sum of PCB congener concentrations lower than screening level suggesting the extent of elevated PCB congeners in sediments is limited to the middle and lower sections of the Eastern Drainage Ditch. Similarly, the total PCB congeners in surface water was observed to increase in concentration between the Alcoa/Badin Landfill and Little Mountain Creek.

Objective - Assess the variation on constituent levels in Little Mountain Creek as intended by the instream monitoring study requirements of the September 29, 2017 Final NPDES Permit Renewal, Condition A. (8.).

- No constituents were detected above regulatory levels in any of the sediment samples collected from Little Mountain Creek.

- The sum of PCB congener concentrations was reported above regulatory levels in one of the surface water samples collected from Little Mountain Creek. However, the sum of the congener

concentrations in the duplicate sample collected at the same time and same location were below laboratory detection limits.

- The 40 Code of Federal Regulations (CFR) 423 Appendix A (Priority Pollutant) analysis of surface water samples from Little Mountain Creek indicated concentrations of PAHs above regulatory limits; however, no surface water sample from the Eastern Drainage Ditch contained a detection of PAHs above laboratory detection limits. The sample location containing the detection was east of NC Highway 740 which has the potential to be influenced from offsite sources to include distressed asphalt, an operating electrical substation, and a county-operating satellite waste collection and recycling facility.

Results from the Subtasks 2 through 4 will be submitted after completion of each respective subtask scope of work.

Appendix A
Laboratory Reports and Chain of Custody Forms

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

July 30, 2018

Michael W. Worden
Environeering, Inc.
16100 Cairnway
Suite 320
Houston, TX 77084

RE: Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Dear Michael Worden:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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CERTIFICATIONS

Project:	Little Mountain Creek Sediment
Pace Project No.:	92391723

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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9800 Kincey Ave. Suite 100
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SAMPLE SUMMARY

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92391723001	**ABL-SD007-F005**	Solid	07/12/18 08:35	07/12/18 12:30
92391723002	**ABL-SD007-D005**	Solid	07/12/18 08:40	07/12/18 12:30
92391723003	**ABL-SD008-F005**	Solid	07/12/18 10:10	07/12/18 12:30

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Huntersville, NC 28078
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SAMPLE ANALYTE COUNT

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92391723001	**ABL-SD007-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92391723002	**ABL-SD007-D005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92391723003	**ABL-SD008-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Sample: ABL-SD007-F005 **Lab ID: 92391723001** Collected: 07/12/18 08:35 Received: 07/12/18 12:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	37.8	17.2	1	07/12/18 18:17	07/13/18 17:58	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	60	%	21-132		1	07/12/18 18:17	07/13/18 17:58	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	11.3	1.7	1	07/12/18 18:16	07/17/18 14:53	83-32-9	
Acenaphthylene	ND	ug/kg	11.3	1.5	1	07/12/18 18:16	07/17/18 14:53	208-96-8	
Anthracene	ND	ug/kg	11.3	1.6	1	07/12/18 18:16	07/17/18 14:53	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.3	0.80	1	07/12/18 18:16	07/17/18 14:53	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.3	1.2	1	07/12/18 18:16	07/17/18 14:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.3	0.76	1	07/12/18 18:16	07/17/18 14:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.3	2.9	1	07/12/18 18:16	07/17/18 14:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.3	1.7	1	07/12/18 18:16	07/17/18 14:53	207-08-9	
Chrysene	ND	ug/kg	11.3	2.0	1	07/12/18 18:16	07/17/18 14:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.3	2.0	1	07/12/18 18:16	07/17/18 14:53	53-70-3	
Fluoranthene	ND	ug/kg	11.3	0.94	1	07/12/18 18:16	07/17/18 14:53	206-44-0	
Fluorene	ND	ug/kg	11.3	1.8	1	07/12/18 18:16	07/17/18 14:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.3	3.2	1	07/12/18 18:16	07/17/18 14:53	193-39-5	
1-Methylnaphthalene	ND	ug/kg	11.3	1.4	1	07/12/18 18:16	07/17/18 14:53	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.3	1.2	1	07/12/18 18:16	07/17/18 14:53	91-57-6	
Naphthalene	ND	ug/kg	11.3	2.6	1	07/12/18 18:16	07/17/18 14:53	91-20-3	
Phenanthrene	ND	ug/kg	11.3	1.7	1	07/12/18 18:16	07/17/18 14:53	85-01-8	
Pyrene	ND	ug/kg	11.3	2.0	1	07/12/18 18:16	07/17/18 14:53	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	45	%	10-128		1	07/12/18 18:16	07/17/18 14:53	4165-60-0	
2-Fluorobiphenyl (S)	36	%	10-110		1	07/12/18 18:16	07/17/18 14:53	321-60-8	
Terphenyl-d14 (S)	44	%	39-119		1	07/12/18 18:16	07/17/18 14:53	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**11.2**	%	0.10	0.10	1		07/13/18 11:57		

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ANALYTICAL RESULTS

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Sample: ABL-SD007-D005 **Lab ID: 92391723002** Collected: 07/12/18 08:40 Received: 07/12/18 12:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	36.7	16.7	1	07/12/18 18:17	07/13/18 18:19	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	48	%	21-132		1	07/12/18 18:17	07/13/18 18:19	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	**2.8J**	ug/kg	11.0	1.7	1	07/12/18 18:16	07/17/18 15:17	83-32-9	
Acenaphthylene	ND	ug/kg	11.0	1.4	1	07/12/18 18:16	07/17/18 15:17	208-96-8	
Anthracene	**6.0J**	ug/kg	11.0	1.5	1	07/12/18 18:16	07/17/18 15:17	120-12-7	
Benzo(a)anthracene	**28.0**	ug/kg	11.0	0.78	1	07/12/18 18:16	07/17/18 15:17	56-55-3	
Benzo(a)pyrene	**32.2**	ug/kg	11.0	1.2	1	07/12/18 18:16	07/17/18 15:17	50-32-8	
Benzo(b)fluoranthene	**42.2**	ug/kg	11.0	0.74	1	07/12/18 18:16	07/17/18 15:17	205-99-2	
Benzo(g,h,i)perylene	**16.1**	ug/kg	11.0	2.9	1	07/12/18 18:16	07/17/18 15:17	191-24-2	
Benzo(k)fluoranthene	**14.9**	ug/kg	11.0	1.7	1	07/12/18 18:16	07/17/18 15:17	207-08-9	
Chrysene	**27.6**	ug/kg	11.0	2.0	1	07/12/18 18:16	07/17/18 15:17	218-01-9	
Dibenz(a,h)anthracene	**4.7J**	ug/kg	11.0	2.0	1	07/12/18 18:16	07/17/18 15:17	53-70-3	
Fluoranthene	**43.3**	ug/kg	11.0	0.92	1	07/12/18 18:16	07/17/18 15:17	206-44-0	
Fluorene	**2.1J**	ug/kg	11.0	1.8	1	07/12/18 18:16	07/17/18 15:17	86-73-7	
Indeno(1,2,3-cd)pyrene	**14.8**	ug/kg	11.0	3.1	1	07/12/18 18:16	07/17/18 15:17	193-39-5	
1-Methylnaphthalene	ND	ug/kg	11.0	1.3	1	07/12/18 18:16	07/17/18 15:17	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.0	1.2	1	07/12/18 18:16	07/17/18 15:17	91-57-6	
Naphthalene	ND	ug/kg	11.0	2.5	1	07/12/18 18:16	07/17/18 15:17	91-20-3	
Phenanthrene	**24.1**	ug/kg	11.0	1.7	1	07/12/18 18:16	07/17/18 15:17	85-01-8	
Pyrene	**37.8**	ug/kg	11.0	2.0	1	07/12/18 18:16	07/17/18 15:17	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	42	%	10-128		1	07/12/18 18:16	07/17/18 15:17	4165-60-0	
2-Fluorobiphenyl (S)	31	%	10-110		1	07/12/18 18:16	07/17/18 15:17	321-60-8	
Terphenyl-d14 (S)	34	%	39-119		1	07/12/18 18:16	07/17/18 15:17	1718-51-0	S0
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**9.1**	%	0.10	0.10	1		07/13/18 11:57		

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ANALYTICAL RESULTS

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Sample: ABL-SD008-F005 **Lab ID: 92391723003** Collected: 07/12/18 10:10 Received: 07/12/18 12:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	42.1	19.1	1	07/12/18 18:17	07/13/18 18:40	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	38	%	21-132		1	07/12/18 18:17	07/13/18 18:40	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	13.1	2.0	1	07/12/18 18:16	07/17/18 17:36	83-32-9	
Acenaphthylene	ND	ug/kg	13.1	1.7	1	07/12/18 18:16	07/17/18 17:36	208-96-8	
Anthracene	ND	ug/kg	13.1	1.8	1	07/12/18 18:16	07/17/18 17:36	120-12-7	IO
Benzo(a)anthracene	ND	ug/kg	13.1	0.93	1	07/12/18 18:16	07/17/18 17:36	56-55-3	
Benzo(a)pyrene	ND	ug/kg	13.1	1.4	1	07/12/18 18:16	07/17/18 17:36	50-32-8	IO
Benzo(b)fluoranthene	ND	ug/kg	13.1	0.88	1	07/12/18 18:16	07/17/18 17:36	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	13.1	3.4	1	07/12/18 18:16	07/17/18 17:36	191-24-2	IO
Benzo(k)fluoranthene	ND	ug/kg	13.1	2.0	1	07/12/18 18:16	07/17/18 17:36	207-08-9	
Chrysene	ND	ug/kg	13.1	2.4	1	07/12/18 18:16	07/17/18 17:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	13.1	2.4	1	07/12/18 18:16	07/17/18 17:36	53-70-3	IO
Fluoranthene	ND	ug/kg	13.1	1.1	1	07/12/18 18:16	07/17/18 17:36	206-44-0	IO
Fluorene	ND	ug/kg	13.1	2.1	1	07/12/18 18:16	07/17/18 17:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	13.1	3.7	1	07/12/18 18:16	07/17/18 17:36	193-39-5	IO
1-Methylnaphthalene	ND	ug/kg	13.1	1.6	1	07/12/18 18:16	07/17/18 17:36	90-12-0	
2-Methylnaphthalene	ND	ug/kg	13.1	1.4	1	07/12/18 18:16	07/17/18 17:36	91-57-6	
Naphthalene	ND	ug/kg	13.1	3.0	1	07/12/18 18:16	07/17/18 17:36	91-20-3	
Phenanthrene	ND	ug/kg	13.1	2.0	1	07/12/18 18:16	07/17/18 17:36	85-01-8	IO
Pyrene	ND	ug/kg	13.1	2.4	1	07/12/18 18:16	07/17/18 17:36	129-00-0	IO
Surrogates									
Nitrobenzene-d5 (S)	46	%	10-128		1	07/12/18 18:16	07/17/18 17:36	4165-60-0	
2-Fluorobiphenyl (S)	36	%	10-110		1	07/12/18 18:16	07/17/18 17:36	321-60-8	
Terphenyl-d14 (S)	39	%	39-119		1	07/12/18 18:16	07/17/18 17:36	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**22.6**	%	0.10	0.10	1		07/13/18 11:57		

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QUALITY CONTROL DATA

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

QC Batch: 418842 | Analysis Method: EPA 8082A
QC Batch Method: EPA 3546 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92391723001, 92391723002, 92391723003

METHOD BLANK: 2321763 | Matrix: Solid
Associated Lab Samples: 92391723001, 92391723002, 92391723003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1221 (Aroclor 1221)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1232 (Aroclor 1232)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1242 (Aroclor 1242)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1248 (Aroclor 1248)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1254 (Aroclor 1254)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1260 (Aroclor 1260)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
Decachlorobiphenyl (S)	%	95	21-132		07/13/18 13:43	

LABORATORY CONTROL SAMPLE & LCSD: 2321764 2321765

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	131	147	79	88	31-120	11	30	
PCB-1260 (Aroclor 1260)	ug/kg	167	148	170	89	102	32-120	14	30	
Decachlorobiphenyl (S)	%				102	113	21-132			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

QC Batch: 418920 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3546 | Analysis Description: 8270 MSSV PAH by SIM
Associated Lab Samples: 92391723001, 92391723002, 92391723003

METHOD BLANK: 2322225 | Matrix: Solid
Associated Lab Samples: 92391723001, 92391723002, 92391723003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	9.9	1.2	07/17/18 10:36	
2-Methylnaphthalene	ug/kg	1.7J	9.9	1.1	07/17/18 10:36	
Acenaphthene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Acenaphthylene	ug/kg	ND	9.9	1.3	07/17/18 10:36	
Anthracene	ug/kg	ND	9.9	1.4	07/17/18 10:36	
Benzo(a)anthracene	ug/kg	ND	9.9	0.70	07/17/18 10:36	
Benzo(a)pyrene	ug/kg	ND	9.9	1.1	07/17/18 10:36	
Benzo(b)fluoranthene	ug/kg	ND	9.9	0.66	07/17/18 10:36	
Benzo(g,h,i)perylene	ug/kg	ND	9.9	2.6	07/17/18 10:36	
Benzo(k)fluoranthene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Chrysene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
Dibenz(a,h)anthracene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
Fluoranthene	ug/kg	ND	9.9	0.82	07/17/18 10:36	
Fluorene	ug/kg	ND	9.9	1.6	07/17/18 10:36	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	9.9	2.8	07/17/18 10:36	
Naphthalene	ug/kg	ND	9.9	2.3	07/17/18 10:36	
Phenanthrene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Pyrene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
2-Fluorobiphenyl (S)	%	47	10-110		07/17/18 10:36	
Nitrobenzene-d5 (S)	%	53	10-128		07/17/18 10:36	
Terphenyl-d14 (S)	%	59	39-119		07/17/18 10:36	

LABORATORY CONTROL SAMPLE: 2322226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	33.8	19.4	57	44-130	
2-Methylnaphthalene	ug/kg	33.8	20.1	59	41-134	
Acenaphthene	ug/kg	33.8	20.0	59	52-123	
Acenaphthylene	ug/kg	33.8	18.4	55	49-116	
Anthracene	ug/kg	33.8	19.2	57	41-133	
Benzo(a)anthracene	ug/kg	33.8	19.5	58	56-130	
Benzo(a)pyrene	ug/kg	33.8	18.5	55	51-136	
Benzo(b)fluoranthene	ug/kg	33.8	17.8	53	37-149	
Benzo(g,h,i)perylene	ug/kg	33.8	17.1	51	39-127	
Benzo(k)fluoranthene	ug/kg	33.8	21.2	63	45-139	
Chrysene	ug/kg	33.8	20.2	60	59-127	
Dibenz(a,h)anthracene	ug/kg	33.8	18.1	54	37-139	
Fluoranthene	ug/kg	33.8	19.1	57	53-132	
Fluorene	ug/kg	33.8	18.8	56	45-127	
Indeno(1,2,3-cd)pyrene	ug/kg	33.8	18.9	56	35-145	

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QUALITY CONTROL DATA

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

LABORATORY CONTROL SAMPLE: 2322226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	33.8	20.2	60	45-123	
Phenanthrene	ug/kg	33.8	18.8	56	50-125	
Pyrene	ug/kg	33.8	18.9	56	52-132	
2-Fluorobiphenyl (S)	%			58	10-110	
Nitrobenzene-d5 (S)	%			66	10-128	
Terphenyl-d14 (S)	%			66	39-119	

MATRIX SPIKE SAMPLE: 2322227

Parameter	Units	35403561001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1.2U	33.3	11.2	33	50-150	M1
2-Methylnaphthalene	ug/kg	1.1U	33.3	11.5	34	50-150	M1
Acenaphthene	ug/kg	1.5U	33.3	11.5	35	50-150	M1
Acenaphthylene	ug/kg	1.3U	33.3	10.5	32	50-150	M1
Anthracene	ug/kg	1.4U	33.3	11.0	33	50-150	M1
Benzo(a)anthracene	ug/kg	0.72U	33.3	11.3	34	50-150	M1
Benzo(a)pyrene	ug/kg	1.1U	33.3	10.6	32	50-150	M1
Benzo(b)fluoranthene	ug/kg	0.68U	33.3	11.0	33	50-150	M1
Benzo(g,h,i)perylene	ug/kg	2.6U	33.3	9.2J	27	50-150	M1
Benzo(k)fluoranthene	ug/kg	1.5U	33.3	11.7	35	50-150	M1
Chrysene	ug/kg	1.8U	33.3	11.2	34	50-150	M1
Dibenz(a,h)anthracene	ug/kg	1.8U	33.3	9.7J	29	50-150	M1
Fluoranthene	ug/kg	0.84U	33.3	11.2	34	50-150	M1
Fluorene	ug/kg	1.6U	33.3	11.0	33	50-150	M1
Indeno(1,2,3-cd)pyrene	ug/kg	2.8U	33.3	10.3	31	50-150	M1
Naphthalene	ug/kg	2.3U	33.3	11.4	34	50-150	M1
Phenanthrene	ug/kg	1.5U	33.3	11.0	33	50-150	M1
Pyrene	ug/kg	1.8U	33.3	11.2	33	50-150	M1
2-Fluorobiphenyl (S)	%				32	10-110	
Nitrobenzene-d5 (S)	%				36	10-128	
Terphenyl-d14 (S)	%				35	39-119	S2

SAMPLE DUPLICATE: 2322228

Parameter	Units	35403557001 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/kg	161	157	3	30	IO
2-Methylnaphthalene	ug/kg	22.5J	25.3J		30	IO
Acenaphthene	ug/kg	63.0J	ND		30	IO
Acenaphthylene	ug/kg	14.3U	ND		30	IO
Anthracene	ug/kg	147	112	27	30	
Benzo(a)anthracene	ug/kg	7.8U	ND		30	IO
Benzo(a)pyrene	ug/kg	12.1U	ND		30	IO
Benzo(b)fluoranthene	ug/kg	7.4U	ND		30	IO
Benzo(g,h,i)perylene	ug/kg	28.5U	ND		30	IO

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

SAMPLE DUPLICATE: 2322228

Parameter	Units	35403557001 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzo(k)fluoranthene	ug/kg	16.5U	ND		30	IO
Chrysene	ug/kg	19.7U	ND		30	IO
Dibenz(a,h)anthracene	ug/kg	19.7U	ND		30	IO
Fluoranthene	ug/kg	92.1J	101J		30	IO
Fluorene	ug/kg	128	77.9J		30	IO
Indeno(1,2,3-cd)pyrene	ug/kg	30.7U	ND		30	IO
Naphthalene	ug/kg	95.7J	105J		30	IO
Phenanthrene	ug/kg	16.5U	ND		30	IO
Pyrene	ug/kg	255	283	10	30	IO
2-Fluorobiphenyl (S)	%	0	0			S4
Nitrobenzene-d5 (S)	%	0	0			D3,P3,S4
Terphenyl-d14 (S)	%	0	0			S4

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

QC Batch: 418938 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92391723001, 92391723002, 92391723003

SAMPLE DUPLICATE: 2322330

Parameter	Units	92391652003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.6	12.9	5	25	

SAMPLE DUPLICATE: 2322331

Parameter	Units	92391774001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	36.8	36.8	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
IO	The internal standard response was outside the laboratory acceptance limits confirmed by reanalysis. The results reported are from the most QC compliant analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
S0	Surrogate recovery outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Little Mountain Creek Sediment
Pace Project No.: 92391723

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92391723001	**ABL-SD007-F005**	EPA 3546	418842	EPA 8082A	419076
92391723002	**ABL-SD007-D005**	EPA 3546	418842	EPA 8082A	419076
92391723003	**ABL-SD008-F005**	EPA 3546	418842	EPA 8082A	419076
92391723001	**ABL-SD007-F005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391723002	**ABL-SD007-D005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391723003	**ABL-SD008-F005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391723001	**ABL-SD007-F005**	ASTM D2974-87	418938		
92391723002	**ABL-SD007-D005**	ASTM D2974-87	418938		
92391723003	**ABL-SD008-F005**	ASTM D2974-87	418938		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐

Sample Condition Upon Receipt

Client Name: Environeering

Project #: WO# : 92391723

92391723

Courier: ☐ Commercial ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: LD 7-12-18

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T040 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 5.6 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 6.0

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on Ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: ACP **Date:** 071218

Project Manager SRF Review: NMG **Date:** 7-12-18

Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO#: 92391723

PM: NMG Due Date: 07/26/18

CLIENT: 92-Alcoa

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	✓				✓	✓	✓	✓	3		✓		✓	✓	✓									✓	✓			
2	✓				✓	✓	✓	✓	3		✓		✓	✓	✓									✓	✓			
3	✓				✓	✓	✓	✓	3		✓		✓	✓	✓									✓	✓			
4	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
5	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
6	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
7	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
8	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
9	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
10	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
11	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			
12	✓				✓	✓	✓	✓			✓		✓	✓	✓									✓	✓			

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, Incorrect preservative, out of temp, Incorrect containers.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Environeering
Address:	138 Fort Jackson Road
	Morrisville, NC 27560
Email:	MWORDEN
Phone: 832-674-8902	Fax:
Requested Due Date:	STD

Section B
Required Project Information:

Report To:	Michael Worden
Copy To:	
Purchase Order #:	
Project Name:	Little Mountain Creek - Sediment
Project #:	137-763

Section C
Invoice Information:

Attention:	
Company Name:	ENVIRONEERING INC
Address:	HOUSTON, TX
Pace Quote:	
Pace Project Manager:	nicole.gasiorowski@pacelabs.com,
Pace Profile #:	7478

Regulatory Agency	State / Location
	NC

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): 8082 PCB Aroclors	1668 PCB congeners	8270SIM PAHs	Residual Chlorine (Y/N)	07239 1723
1	ABL-SD007-F005	SL	G	—	—	7/12	835		3	X								X	X	X		001
2	ABL-SD007-D005	SL	G	—	—	7/12	840		3	X								X	X	X		002
3	ABL-SD008-F005	SL	G	—	—	7/12	1010		3	X								X	X	X		003
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature] Environeering	7/12/18	1115	[signature] Environeering	7/12/18	1115
	[signature] / Environeering	7/12/18	1230	[signature] Pace	7-12-18	12:30

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
6.0	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MICHAEL WORDEN

SIGNATURE of SAMPLER: [signature] DATE Signed: 7/12/18

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client - Charlotte
PACE Charlotte
9800 Kincey Ave.
Huntersville NC 28078

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date:
July 30, 2018

Report Information:

Pace Project #: 10439556
Sample Receipt Date: 07/14/2018
Client Project #: 92391723 Alcoa-Badin Works (
Client Sub PO #: N/A
State Cert #: 27700

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:

July 30, 2018

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of Pace Analytical - NC. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to 25-75 parts-per-trillion and adjusted for the amount of dry sample extracted.

The dilution level noted on the data tables is being adjusted to allow the correct data flags to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume. The standard reporting limits were not adjusted since the limits remained within the calibration range even after dilutions were applied.

The recoveries of the isotopically-labeled PCB internal standards in the sample extracts ranged from 43-114%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained. Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results table.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the PCB content of the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 71-125%, with relative percent differences of 0.0-22.5%. The RPD for the DiCB congeners in solid matrix spike pair was above the 20% limit used by Pace analytical. This could indicate a higher than normal variability in the Di-CB results from the associated sample extracts. However, these values were within method limits. Matrix spikes were not extracted with these sample batches.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Montana	CERT0092
Alaska - UST	17-009	Nebraska	NE-OS-18-06
Arizona	AZ0014	Nevada	MN00064
Arkansas - DW	MN00064	New Hampshire	2081
Arkansas - WW	88-0680	New Jersey (NE	MN002
CNMI Saipan	MP0003	New York	11647
California	2929	North Carolina	27700
Colorado	MN00064	North Carolina -	27700
Connecticut	PH-0256	North Carolina -	530
EPA Region 8+	via MN 027-053	North Dakota	R-036
Florida (NELAP	E87605	Ohio - DW	41244
Georgia	959	Ohio - VAP	CL101
Guam	17-001r	Oklahoma	9507
Hawaii	MN00064	Oregon - Primar	MN300001
Idaho	MN00064	Oregon - Secon	MN200001
Illinois	200011	Pennsylvania	68-00563
Indiana	C-MN-01	Puerto Rico	MN00064
Iowa	368	South Carolina	74003
Kansas	E-10167	South Dakota	NA
Kentucky - DW	90062	Tennessee	TN02818
Kentucky - WW	90062	Texas	T104704192
Louisiana - DE	03086	Utah (NELAP)	MN00064
Louisiana - DW	MN00064	Virginia	460163
Maine	MN00064	Washington	C486
Maryland	322	West Virginia -	382
Massachusetts	M-MN064	West Virginia -	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming - UST	2926.01
Minnesota - De	via MN 027-053		

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

WO#: 10439556

10439556

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NC

Workorder: 92391723 Workorder Name: Little Mountain Creek Sediment Owner Received Date: 7/12/2018 Results Requested By: 7/26/2018

Report To

Nicole Gasiorowski
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Subcontract To

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1668 209 PCB Congeners	LAB USE ONLY
1	ABL-SD007-F005	PS	7/12/2018 08:35	92391723001	Solid	1	X	001
2	ABL-SD007-D005	PS	7/12/2018 08:40	92391723002	Solid	1	X	002
3	ABL-SD008-F005	PS	7/12/2018 10:10	92391723003	Solid	1	X	003
4								
5								

P/MB 7/13/18

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	7/13/18 (8:00)	Lucas [illegible] Pace	7/14/18 930
2				
3				

Comments

Stanley county, NC

Cooler Temperature on Receipt * °C | Custody Seal Y or (N) | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

* 2.1, ~~3.4~~, 2.1, 4.3
LE
7-14-18

USDA

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace NC

Project #: **WO#: 10439556**

PM: NB3 **Due Date: 07/30/18**

CLIENT: PASI-CHRLT

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4394 2203 4678, 4667, 466 LR 7-14-18 4656

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.1, 4.3 2.1 **Cooler Temp Corrected (°C):** 2.1, 4.3, 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** LR 7-14-18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☒ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested? LR 7-14-18	~~☒ Yes~~	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nathan Boberg **Date:** 7/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

USDA REGULATED SOIL CHECKLIST

To Be Completed by SR Staff:

WO: 10439556 Date: 7-14-18 Initials: LR

Sample Origin (circle one): DOMESTIC QUARANTINED FOREIGN

(Note: soil samples from Hawaii, Guam, Puerto Rico and the US Virgin Islands are considered to be of a Foreign Source)

If Domestic, circle State of Origin: AL AR CA FL GA LA MS NC NM NY OK OR SC TN TX VA

(Includes: IFA, SOD, Golden Nematode, Karnal Bunt and Witchweed) List County: Stanley

(USDA Permit/Compliance Agreement authorizes movement of samples from these domestic regulated zones)

If Quarantined, circle State of Origin: FL ID TX CA List County:

(Includes Fruit Fly, Giant African Snail and Pale Cyst Nematode)

(Movement is not authorized for Pale Cyst Nematode [ID or Giant African Snail [FL], remaining quarantines require additional paperwork)

If Foreign, list Country of Origin:

(Movement from some Canadian Providences is not allowed. Refer to CS-232 Regulated Soil Flow Chart)

REQUIREMENT	ACTION	COMPLETED
PPQ-530 Paperwork must be included for any samples from counties with a Fruit Fly Quarantine in TX. Refer to **MN-S063** through **MN-S065**	Scan PPQ-530 to the corresponding Project folder on the x drive. If PPQ-530 is not present, contact the Waste Coordinator and do not continue processing samples.	YES NO N/A
Samples from ID may not be moved from the quarantined region. Refer to **MN-S055**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO N/A
Samples from Giant African Snail Quarantine in FL may not be moved from the quarantined region. Refer to **MN-S068**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO N/A

REQUIREMENT	ACTION	COMPLETED
"Special Handling" stickers are to be placed on all samples.	Did "special handling" stickers get placed on all sample containers?	YES NO
Samples must be segregated and stored in designated bins, shelves and coolers.	Were samples placed in a designated cooler, containers and shelves?	YES NO
Samples must be double contained to prevent accidental release.	Were there any signs of leakage or leaks or broken glass and/or loose soil in the cooler)? *If NO, ice and melt water can be disposed of by normal process (down the drain).*	YES NO
	If **YES**, were ice and melt water separated from the cooler and disposed of properly? **Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator).** **Ice and melt water should be baked at a temperature range of 121-154°F for 2 hours and then cooled before going down the drain.**	YES NO N/A
Equipment and supplies that have come into contact samples must be decontaminated.	Was the cooler(s) and/or countertop(s) decontaminated using either a fresh 10% bleach solution or 70% ethanol? *(Gloves and other lab supplies will be bagged and placed in the USDA Regulated satellite container or active drum).*	YES NO

Comments:

To Be Completed by PM and/or PC:

Sample Analysis to be conducted (circle all that apply): MN Subcontract Lab

Name of Subcontract Lab (s): _____

REQUIREMENT	ACTION	COMPLETED
Permission to ship untreated soil must be on file prior to shipping to any subcontract lab, including IR Pace Labs.	Go to: J:\SHARE\PRJ_MGR\10_Client Services Department Documents\Regulated Soils Permits – if permission to ship letter is not there, contact the Waste Coordinator.	YES NO N/A
Shipment must include a valid copy of the receiving lab's permit as well as permission to ship letter.	Is a copy of all needed paperwork included with the COC? Do **NOT** ship samples until all necessary paperwork is compiled.	YES NO N/A

Comments: _____

Project Manager Signature: Nathan Boberg Date: 7/16/18

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD007-F005		
Lab Sample ID	92391723001		
Filename	P180727A_11		
Injected By	CVS		
Total Amount Extracted	11.6 g	Matrix	Solid
% Moisture	11.2	Dilution	NA
Dry Weight Extracted	10.3 g	Collected	07/12/2018 08:35
ICAL ID	P180727A02	Received	07/14/2018 09:30
CCal Filename(s)	P180727A_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/27/2018 10:22

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.563	2.75	2.0	1.29	64
13C-4-MoCB	3	12.415	2.83	2.0	1.16	58
13C-2,2'-DiCB	4	12.726	1.53	2.0	0.874	44
13C-4,4'-DiCB	15	19.950	1.73	2.0	1.38	69
13C-2,2',6-TrCB	19	16.571	1.02	2.0	0.950	47
13C-3,4,4'-TrCB	37	27.693	1.13	2.0	1.94	97
13C-2,2',6,6'-TeCB	54	20.264	0.88	2.0	1.68	84
13C-3,4,4',5-TeCB	81	34.825	0.83	2.0	2.12	106
13C-3,3',4,4'-TeCB	77	35.412	0.79	2.0	1.80	90
13C-2,2',4,6,6'-PeCB	104	26.301	1.71	2.0	1.24	62
13C-2,3,3',4,4'-PeCB	105	38.989	1.58	2.0	1.71	85
13C-2,3,4,4',5-PeCB	114	38.301	1.56	2.0	1.71	85
13C-2,3',4,4',5-PeCB	118	37.765	1.63	2.0	1.84	92
13C-2,3',4,4',5'-PeCB	123	37.413	1.58	2.0	1.84	92
13C-3,3',4,4',5-PeCB	126	42.175	1.69	2.0	1.91	95
13C-2,2',4,4',6,6'-HxCB	155	32.310	1.27	2.0	1.04	52
13C-HxCB(156/157)	156/157	45.232	1.31	4.0	2.77	69
13C-2,3',4,4',5,5'-HxCB	167	44.008	1.32	2.0	1.33	66
13C-3,3',4,4',5,5'-HxCB	169	48.519	1.30	2.0	1.32	66
13C-2,2',3,4',5,6,6'-HpCB	188	38.234	1.15	2.0	1.27	64
13C-2,3,3',4,4',5,5'-HpCB	189	51.025	1.04	2.0	1.43	71
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.723	0.86	2.0	1.19	59
13C-2,3,3',4,4',5,5',6-OcCB	205	53.094	0.91	2.0	1.32	66
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.516	0.77	2.0	1.31	66
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.486	0.85	2.0	1.15	57
13C--DeCB	209	55.960	0.66	2.0	1.15	58
CleanupStandards						
13C-2,4,4'-TrCB	28	23.282	1.05	2.0	1.94	97
13C-2,3,3',5,5'-PeCB	111	35.378	1.53	2.0	1.36	68
13C-2,2',3,3',5,5',6-HpCB	178	41.370	1.09	2.0	1.13	56
Recovery Standards						
13C-2,5-DiCB	9	15.205	1.56	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.261	0.85	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.561	1.61	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.934	1.24	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.706	0.88	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-F005
Lab Sample ID 92391723001
Filename P180727A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	24.3
2		---	---	ND	---	24.3
3		---	---	ND	---	24.3
4		---	---	ND	---	24.3
5		---	---	ND	---	24.3
6		---	---	ND	---	24.3
7		---	---	ND	---	24.3
8		---	---	ND	---	24.3
9		---	---	ND	---	24.3
10		---	---	ND	---	24.3
11		---	---	ND	---	238
12	12/13	---	---	ND	---	48.5
13	12/13	---	---	ND	---	48.5
14		---	---	ND	---	24.3
15		---	---	ND	---	32.0
16		---	---	ND	---	24.3
17		---	---	ND	---	24.3
18	18/30	---	---	ND	---	48.5
19		---	---	ND	---	24.3
20	20/28	23.299	1.01	165	---	125
21	21/33	---	---	ND	---	131
22		---	---	ND	---	92.2
23		---	---	ND	---	24.3
24		---	---	ND	---	24.3
25		---	---	ND	---	24.3
26	26/29	---	---	ND	---	48.5
27		---	---	ND	---	24.3
28	20/28	23.299	1.01	(165)	---	125
29	26/29	---	---	ND	---	48.5
30	18/30	---	---	ND	---	48.5
31		22.980	1.05	180	---	126
32		20.465	0.99	25.7	---	24.3
33	21/33	---	---	ND	---	131
34		---	---	ND	---	24.3
35		---	---	ND	---	24.3
36		---	---	ND	---	24.3
37		27.693	1.01	81.8	---	51.5
38		---	---	ND	---	24.3
39		---	---	ND	---	24.3
40	40/41/71	---	---	ND	---	146
41	40/41/71	---	---	ND	---	146
42		26.955	0.80	66.6	---	48.5
43	43/73	---	---	ND	---	48.5
44	44/47/65	26.402	0.80	215	---	146
45	45/51	---	---	ND	---	97.1
46		---	---	ND	---	48.5
47	44/47/65	26.402	0.80	(215)	---	146
48		---	---	ND	---	48.5

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-F005
Lab Sample ID 92391723001
Filename P180727A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	25.848	0.77	161	---	97.1
50	50/53	---	---	ND	---	97.1
51	45/51	---	---	ND	---	97.1
52		25.312	0.80	249	---	150
53	50/53	---	---	ND	---	97.1
54		---	---	ND	---	48.5
55		---	---	ND	---	48.5
56		31.521	0.80	226	---	48.5
57		---	---	ND	---	48.5
58		---	---	ND	---	48.5
59	59/62/75	---	---	ND	---	146
60		31.739	0.81	140	---	48.5
61	61/70/74/76	30.448	0.80	886	---	194
62	59/62/75	---	---	ND	---	146
63		---	---	ND	---	48.5
64		27.726	0.83	180	---	48.5
65	44/47/65	26.402	0.80	(215)	---	146
66		30.817	0.78	468	---	81.5
67		---	---	ND	---	48.5
68		---	---	ND	---	48.5
69	49/69	25.848	0.77	(161)	---	97.1
70	61/70/74/76	30.448	0.80	(886)	---	194
71	40/41/71	---	---	ND	---	146
72		---	---	ND	---	48.5
73	43/73	---	---	ND	---	48.5
74	61/70/74/76	30.448	0.80	(886)	---	194
75	59/62/75	---	---	ND	---	146
76	61/70/74/76	30.448	0.80	(886)	---	194
77		35.429	0.79	105	---	48.5
78		---	---	ND	---	48.5
79		---	---	ND	---	48.5
80		---	---	ND	---	48.5
81		---	---	ND	---	48.5
82		35.026	1.62	51.3	---	48.5
83		---	---	ND	---	48.5
84		---	---	ND	---	48.5
85	85/116/117	---	---	ND	---	146
86	86/87/97/108/119/125	---	---	ND	---	291
87	86/87/97/108/119/125	---	---	ND	---	291
88	88/91	---	---	ND	---	97.1
89		---	---	ND	---	48.5
90	90/101/113	32.611	1.52	191	---	146
91	88/91	---	---	ND	---	97.1
92		---	---	ND	---	48.5
93	93/98/100/102	---	---	ND	---	194
94		---	---	ND	---	48.5
95		29.526	1.54	106	---	92.2
96		---	---	ND	---	48.5

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-F005
Lab Sample ID 92391723001
Filename P180727A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	---	---	ND	---	291
98	93/98/100/102	---	---	ND	---	194
99		33.198	1.55	129	---	48.5
100	93/98/100/102	---	---	ND	---	194
101	90/101/113	32.611	1.52	(191)	---	146
102	93/98/100/102	---	---	ND	---	194
103		---	---	ND	---	48.5
104		---	---	ND	---	48.5
105		39.022	1.59	232	---	48.5
106		---	---	ND	---	48.5
107	107/124	---	---	ND	---	97.1
108	86/87/97/108/119/125	---	---	ND	---	291
109		---	---	ND	---	48.5
110	110/115	34.674	1.60	335	---	97.1
111		---	---	ND	---	48.5
112		---	---	ND	---	48.5
113	90/101/113	32.611	1.52	(191)	---	146
114		---	---	ND	---	48.5
115	110/115	34.674	1.60	(335)	---	97.1
116	85/116/117	---	---	ND	---	146
117	85/116/117	---	---	ND	---	146
118		37.798	1.60	354	---	62.1
119	86/87/97/108/119/125	---	---	ND	---	291
120		---	---	ND	---	48.5
121		---	---	ND	---	48.5
122		---	---	ND	---	48.5
123		---	---	ND	---	48.5
124	107/124	---	---	ND	---	97.1
125	86/87/97/108/119/125	---	---	ND	---	291
126		---	---	ND	---	48.5
127		---	---	ND	---	48.5
128	128/166	---	---	ND	---	97.1
129	129/138/163	40.985	1.21	249	---	146
130		---	---	ND	---	48.5
131		---	---	ND	---	48.5
132		37.899	1.40	55.6	---	48.5
133		---	---	ND	---	48.5
134	134/143	---	---	ND	---	97.1
135	135/151	---	---	ND	---	97.1
136		---	---	ND	---	48.5
137		---	---	ND	---	48.5
138	129/138/163	40.985	1.21	(249)	---	146
139	139/140	---	---	ND	---	97.1
140	139/140	---	---	ND	---	97.1
141		---	---	ND	---	48.5
142		---	---	ND	---	48.5
143	134/143	---	---	ND	---	97.1
144		---	---	ND	---	48.5

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-F005
Lab Sample ID 92391723001
Filename P180727A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	48.5
146		---	---	ND	---	48.5
147	147/149	36.574	1.27	161	---	97.1
148		---	---	ND	---	48.5
149	147/149	36.574	1.27	(161)	---	97.1
150		---	---	ND	---	48.5
151	135/151	---	---	ND	---	97.1
152		---	---	ND	---	48.5
153	153/168	39.676	1.26	196	---	97.1
154		---	---	ND	---	48.5
155		---	---	ND	---	48.5
156	156/157	---	---	ND	---	97.1
157	156/157	---	---	ND	---	97.1
158		---	---	ND	---	48.5
159		---	---	ND	---	48.5
160		---	---	ND	---	48.5
161		---	---	ND	---	48.5
162		---	---	ND	---	48.5
163	129/138/163	40.985	1.21	(249)	---	146
164		---	---	ND	---	48.5
165		---	---	ND	---	48.5
166	128/166	---	---	ND	---	97.1
167		---	---	ND	---	48.5
168	153/168	39.676	1.26	(196)	---	97.1
169		---	---	ND	---	48.5
170		47.898	0.90	64.9	---	48.5
171	171/173	---	---	ND	---	97.1
172		---	---	ND	---	48.5
173	171/173	---	---	ND	---	97.1
174		43.203	1.00	82.2	---	48.5
175		---	---	ND	---	48.5
176		---	---	ND	---	48.5
177		---	---	ND	---	48.5
178		---	---	ND	---	48.5
179		---	---	ND	---	48.5
180	180/193	46.607	1.04	165	---	97.1
181		---	---	ND	---	48.5
182		---	---	ND	---	48.5
183	183/185	---	---	ND	---	97.1
184		---	---	ND	---	48.5
185	183/185	---	---	ND	---	97.1
186		---	---	ND	---	48.5
187		42.326	1.03	101	---	48.5
188		---	---	ND	---	48.5
189		---	---	ND	---	48.5
190		---	---	ND	---	48.5
191		---	---	ND	---	48.5
192		---	---	ND	---	48.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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A = Limit of Detection based on signal to noise
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-F005
Lab Sample ID 92391723001
Filename P180727A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	46.607	1.04	(165)	---	97.1
194		---	---	ND	---	72.8
195		---	---	ND	---	72.8
196		---	---	ND	---	72.8
197	197/200	---	---	ND	---	146
198	198/199	---	---	ND	---	146
199	198/199	---	---	ND	---	146
200	197/200	---	---	ND	---	146
201		---	---	ND	---	72.8
202		---	---	ND	---	72.8
203		---	---	ND	---	72.8
204		---	---	ND	---	72.8
205		---	---	ND	---	72.8
206		---	---	ND	---	72.8
207		---	---	ND	---	72.8
208		---	---	ND	---	72.8
209		---	---	ND	---	72.8

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD007-F005
Lab Sample ID	92391723001
Filename	P180727A_11

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	453
Total Tetrachloro Biphenyls	2700
Total Pentachloro Biphenyls	1400
Total Hexachloro Biphenyls	662
Total Heptachloro Biphenyls	413
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	5620

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD007-D005		
Lab Sample ID	92391723002		
Filename	P180727A_12		
Injected By	CVS		
Total Amount Extracted	11.0 g	Matrix	Solid
% Moisture	9.1	Dilution	NA
Dry Weight Extracted	10.00 g	Collected	07/12/2018 08:40
ICAL ID	P180727A02	Received	07/14/2018 09:30
CCal Filename(s)	P180727A_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/27/2018 11:21

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.575	2.68	2.0	1.43	72
13C-4-MoCB	3	12.415	3.45	2.0	1.18	59
13C-2,2'-DiCB	4	12.714	1.60	2.0	0.864	43
13C-4,4'-DiCB	15	19.877	1.57	2.0	1.10	55
13C-2,2',6-TrCB	19	16.546	1.19	2.0	0.991	50
13C-3,4,4'-TrCB	37	27.692	1.17	2.0	1.70	85
13C-2,2',6,6'-TeCB	54	20.180	0.82	2.0	1.45	73
13C-3,4,4',5-TeCB	81	34.824	0.83	2.0	2.08	104
13C-3,3',4,4'-TeCB	77	35.411	0.77	2.0	1.56	78
13C-2,2',4,6,6'-PeCB	104	26.300	1.62	2.0	1.31	65
13C-2,3,3',4,4'-PeCB	105	39.004	1.66	2.0	1.71	86
13C-2,3,4,4',5-PeCB	114	38.317	1.58	2.0	1.75	88
13C-2,3',4,4',5-PeCB	118	37.764	1.64	2.0	1.75	88
13C-2,3',4,4',5'-PeCB	123	37.428	1.57	2.0	1.67	83
13C-3,3',4,4',5-PeCB	126	42.190	1.55	2.0	1.88	94
13C-2,2',4,4',6,6'-HxCB	155	32.325	1.30	2.0	1.31	66
13C-HxCB(156/157)	156/157	45.231	1.32	4.0	3.22	81
13C-2,3',4,4',5,5'-HxCB	167	44.023	1.43	2.0	1.61	80
13C-3,3',4,4',5,5'-HxCB	169	48.534	1.27	2.0	1.76	88
13C-2,2',3,4',5,6,6'-HpCB	188	38.250	1.05	2.0	1.14	57
13C-2,3,3',4,4',5,5'-HpCB	189	51.023	1.08	2.0	1.33	67
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.705	0.88	2.0	1.14	57
13C-2,3,3',4,4',5,5',6-OcCB	205	53.092	0.93	2.0	1.41	71
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.515	0.80	2.0	1.27	64
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.506	0.84	2.0	1.10	55
13C--DeCB	209	55.981	0.71	2.0	1.20	60
CleanupStandards						
13C-2,4,4'-TrCB	28	23.265	1.16	2.0	1.79	90
13C-2,3,3',5,5'-PeCB	111	35.377	1.59	2.0	1.45	73
13C-2,2',3,3',5,5',6-HpCB	178	41.369	1.05	2.0	1.36	68
Recovery Standards						
13C-2,5-DiCB	9	15.180	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.261	0.80	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.577	1.59	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.950	1.29	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.704	0.90	2.0	NA	NA

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-D005
Lab Sample ID 92391723002
Filename P180727A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	25.0
2		---	---	ND	---	25.0
3		---	---	ND	---	25.0
4		---	---	ND	---	25.0
5		---	---	ND	---	25.0
6		---	---	ND	---	25.0
7		---	---	ND	---	25.0
8		---	---	ND	---	25.0
9		---	---	ND	---	25.0
10		---	---	ND	---	25.0
11		---	---	ND	---	245
12	12/13	---	---	ND	---	50.0
13	12/13	---	---	ND	---	50.0
14		---	---	ND	---	25.0
15		---	---	ND	---	33.0
16		---	---	ND	---	25.0
17		---	---	ND	---	25.0
18	18/30	---	---	ND	---	50.0
19		---	---	ND	---	25.0
20	20/28	---	---	ND	---	129
21	21/33	---	---	ND	---	135
22		---	---	ND	---	95.0
23		---	---	ND	---	25.0
24		---	---	ND	---	25.0
25		---	---	ND	---	25.0
26	26/29	---	---	ND	---	50.0
27		---	---	ND	---	25.0
28	20/28	---	---	ND	---	129
29	26/29	---	---	ND	---	50.0
30	18/30	---	---	ND	---	50.0
31		---	---	ND	---	130
32		---	---	ND	---	25.0
33	21/33	---	---	ND	---	135
34		---	---	ND	---	25.0
35		---	---	ND	---	25.0
36		---	---	ND	---	25.0
37		---	---	ND	---	53.0
38		---	---	ND	---	25.0
39		---	---	ND	---	25.0
40	40/41/71	---	---	ND	---	150
41	40/41/71	---	---	ND	---	150
42		---	---	ND	---	50.0
43	43/73	---	---	ND	---	50.0
44	44/47/65	---	---	ND	---	150
45	45/51	---	---	ND	---	100
46		---	---	ND	---	50.0
47	44/47/65	---	---	ND	---	150
48		---	---	ND	---	50.0

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-D005
Lab Sample ID 92391723002
Filename P180727A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	100
50	50/53	---	---	ND	---	100
51	45/51	---	---	ND	---	100
52		---	---	ND	---	154
53	50/53	---	---	ND	---	100
54		---	---	ND	---	50.0
55		---	---	ND	---	50.0
56		---	---	ND	---	50.0
57		---	---	ND	---	50.0
58		---	---	ND	---	50.0
59	59/62/75	---	---	ND	---	150
60		---	---	ND	---	50.0
61	61/70/74/76	---	---	ND	---	200
62	59/62/75	---	---	ND	---	150
63		---	---	ND	---	50.0
64		---	---	ND	---	50.0
65	44/47/65	---	---	ND	---	150
66		---	---	ND	---	84.0
67		---	---	ND	---	50.0
68		---	---	ND	---	50.0
69	49/69	---	---	ND	---	100
70	61/70/74/76	---	---	ND	---	200
71	40/41/71	---	---	ND	---	150
72		---	---	ND	---	50.0
73	43/73	---	---	ND	---	50.0
74	61/70/74/76	---	---	ND	---	200
75	59/62/75	---	---	ND	---	150
76	61/70/74/76	---	---	ND	---	200
77		---	---	ND	---	50.0
78		---	---	ND	---	50.0
79		---	---	ND	---	50.0
80		---	---	ND	---	50.0
81		---	---	ND	---	50.0
82		---	---	ND	---	50.0
83		---	---	ND	---	50.0
84		---	---	ND	---	50.0
85	85/116/117	---	---	ND	---	150
86	86/87/97/108/119/125	---	---	ND	---	300
87	86/87/97/108/119/125	---	---	ND	---	300
88	88/91	---	---	ND	---	100
89		---	---	ND	---	50.0
90	90/101/113	---	---	ND	---	150
91	88/91	---	---	ND	---	100
92		---	---	ND	---	50.0
93	93/98/100/102	---	---	ND	---	200
94		---	---	ND	---	50.0
95		---	---	ND	---	95.0
96		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-D005
Lab Sample ID 92391723002
Filename P180727A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	---	---	ND	---	300
98	93/98/100/102	---	---	ND	---	200
99		---	---	ND	---	50.0
100	93/98/100/102	---	---	ND	---	200
101	90/101/113	---	---	ND	---	150
102	93/98/100/102	---	---	ND	---	200
103		---	---	ND	---	50.0
104		---	---	ND	---	50.0
105		---	---	ND	---	50.0
106		---	---	ND	---	50.0
107	107/124	---	---	ND	---	100
108	86/87/97/108/119/125	---	---	ND	---	300
109		---	---	ND	---	50.0
110	110/115	---	---	ND	---	100
111		---	---	ND	---	50.0
112		---	---	ND	---	50.0
113	90/101/113	---	---	ND	---	150
114		---	---	ND	---	50.0
115	110/115	---	---	ND	---	100
116	85/116/117	---	---	ND	---	150
117	85/116/117	---	---	ND	---	150
118		---	---	ND	---	64.0
119	86/87/97/108/119/125	---	---	ND	---	300
120		---	---	ND	---	50.0
121		---	---	ND	---	50.0
122		---	---	ND	---	50.0
123		---	---	ND	---	50.0
124	107/124	---	---	ND	---	100
125	86/87/97/108/119/125	---	---	ND	---	300
126		---	---	ND	---	50.0
127		---	---	ND	---	50.0
128	128/166	---	---	ND	---	100
129	129/138/163	---	---	ND	---	150
130		---	---	ND	---	50.0
131		---	---	ND	---	50.0
132		---	---	ND	---	50.0
133		---	---	ND	---	50.0
134	134/143	---	---	ND	---	100
135	135/151	---	---	ND	---	100
136		---	---	ND	---	50.0
137		---	---	ND	---	50.0
138	129/138/163	---	---	ND	---	150
139	139/140	---	---	ND	---	100
140	139/140	---	---	ND	---	100
141		---	---	ND	---	50.0
142		---	---	ND	---	50.0
143	134/143	---	---	ND	---	100
144		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-D005
Lab Sample ID 92391723002
Filename P180727A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	50.0
146		---	---	ND	---	50.0
147	147/149	---	---	ND	---	100
148		---	---	ND	---	50.0
149	147/149	---	---	ND	---	100
150		---	---	ND	---	50.0
151	135/151	---	---	ND	---	100
152		---	---	ND	---	50.0
153	153/168	---	---	ND	---	100
154		---	---	ND	---	50.0
155		---	---	ND	---	50.0
156	156/157	---	---	ND	---	100
157	156/157	---	---	ND	---	100
158		---	---	ND	---	50.0
159		---	---	ND	---	50.0
160		---	---	ND	---	50.0
161		---	---	ND	---	50.0
162		---	---	ND	---	50.0
163	129/138/163	---	---	ND	---	150
164		---	---	ND	---	50.0
165		---	---	ND	---	50.0
166	128/166	---	---	ND	---	100
167		---	---	ND	---	50.0
168	153/168	---	---	ND	---	100
169		---	---	ND	---	50.0
170		---	---	ND	---	50.0
171	171/173	---	---	ND	---	100
172		---	---	ND	---	50.0
173	171/173	---	---	ND	---	100
174		---	---	ND	---	50.0
175		---	---	ND	---	50.0
176		---	---	ND	---	50.0
177		---	---	ND	---	50.0
178		---	---	ND	---	50.0
179		---	---	ND	---	50.0
180	180/193	---	---	ND	---	100
181		---	---	ND	---	50.0
182		---	---	ND	---	50.0
183	183/185	---	---	ND	---	100
184		---	---	ND	---	50.0
185	183/185	---	---	ND	---	100
186		---	---	ND	---	50.0
187		---	---	ND	---	50.0
188		---	---	ND	---	50.0
189		---	---	ND	---	50.0
190		---	---	ND	---	50.0
191		---	---	ND	---	50.0
192		---	---	ND	---	50.0

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD007-D005
Lab Sample ID 92391723002
Filename P180727A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	---	---	ND	---	100
194		---	---	ND	---	75.0
195		---	---	ND	---	75.0
196		---	---	ND	---	75.0
197	197/200	---	---	ND	---	150
198	198/199	---	---	ND	---	150
199	198/199	---	---	ND	---	150
200	197/200	---	---	ND	---	150
201		---	---	ND	---	75.0
202		---	---	ND	---	75.0
203		---	---	ND	---	75.0
204		---	---	ND	---	75.0
205		---	---	ND	---	75.0
206		---	---	ND	---	75.0
207		---	---	ND	---	75.0
208		---	---	ND	---	75.0
209		---	---	ND	---	75.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD007-D005
Lab Sample ID	92391723002
Filename	P180727A_12

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a dry weight basis

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD008-F005		
Lab Sample ID	92391723003		
Filename	P180727A_13		
Injected By	CVS		
Total Amount Extracted	13.3 g	Matrix	Solid
% Moisture	22.6	Dilution	NA
Dry Weight Extracted	10.3 g	Collected	07/12/2018 10:10
ICAL ID	P180727A02	Received	07/14/2018 09:30
CCal Filename(s)	P180727A_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/27/2018 12:21

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.575	2.66	2.0	1.32	66
13C-4-MoCB	3	12.415	3.08	2.0	1.16	58
13C-2,2'-DiCB	4	12.715	1.63	2.0	0.875	44
13C-4,4'-DiCB	15	19.866	1.61	2.0	1.08	54
13C-2,2',6-TrCB	19	16.547	1.09	2.0	0.910	46
13C-3,4,4'-TrCB	37	27.676	1.10	2.0	1.59	80
13C-2,2',6,6'-TeCB	54	20.181	0.82	2.0	1.42	71
13C-3,4,4',5-TeCB	81	34.824	0.81	2.0	2.28	114
13C-3,3',4,4'-TeCB	77	35.411	0.80	2.0	1.70	85
13C-2,2',4,6,6'-PeCB	104	26.301	1.66	2.0	1.31	65
13C-2,3,3',4,4'-PeCB	105	38.988	1.67	2.0	1.83	92
13C-2,3,4,4',5-PeCB	114	38.317	1.55	2.0	1.77	88
13C-2,3',4,4',5-PeCB	118	37.764	1.61	2.0	1.85	93
13C-2,3',4,4',5'-PeCB	123	37.429	1.56	2.0	1.79	90
13C-3,3',4,4',5-PeCB	126	42.174	1.57	2.0	1.91	96
13C-2,2',4,4',6,6'-HxCB	155	32.309	1.19	2.0	1.19	60
13C-HxCB(156/157)	156/157	45.231	1.30	4.0	3.07	77
13C-2,3',4,4',5,5'-HxCB	167	44.007	1.20	2.0	1.49	75
13C-3,3',4,4',5,5'-HxCB	169	48.517	1.37	2.0	1.69	84
13C-2,2',3,4',5,6,6'-HpCB	188	38.233	0.98	2.0	1.25	63
13C-2,3,3',4,4',5,5'-HpCB	189	51.023	1.09	2.0	1.68	84
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.722	0.91	2.0	1.24	62
13C-2,3,3',4,4',5,5',6-OcCB	205	53.092	1.01	2.0	1.59	79
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.515	0.75	2.0	1.44	72
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.506	0.78	2.0	1.30	65
13C--DeCB	209	55.980	0.75	2.0	1.42	71
CleanupStandards						
13C-2,4,4'-TrCB	28	23.266	1.10	2.0	1.73	86
13C-2,3,3',5,5'-PeCB	111	35.361	1.59	2.0	1.63	81
13C-2,2',3,3',5,5',6-HpCB	178	41.369	1.07	2.0	1.33	66
Recovery Standards						
13C-2,5-DiCB	9	15.169	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.261	0.79	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.577	1.56	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.933	1.23	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.726	0.90	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a dry weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD008-F005
Lab Sample ID 92391723003
Filename P180727A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	24.3
2		---	---	ND	---	24.3
3		---	---	ND	---	24.3
4		---	---	ND	---	24.3
5		---	---	ND	---	24.3
6		---	---	ND	---	24.3
7		---	---	ND	---	24.3
8		---	---	ND	---	24.3
9		---	---	ND	---	24.3
10		---	---	ND	---	24.3
11		---	---	ND	---	238
12	12/13	---	---	ND	---	48.6
13	12/13	---	---	ND	---	48.6
14		---	---	ND	---	24.3
15		---	---	ND	---	32.1
16		---	---	ND	---	24.3
17		---	---	ND	---	24.3
18	18/30	---	---	ND	---	48.6
19		---	---	ND	---	24.3
20	20/28	---	---	ND	---	125
21	21/33	---	---	ND	---	131
22		---	---	ND	---	92.3
23		---	---	ND	---	24.3
24		---	---	ND	---	24.3
25		---	---	ND	---	24.3
26	26/29	---	---	ND	---	48.6
27		---	---	ND	---	24.3
28	20/28	---	---	ND	---	125
29	26/29	---	---	ND	---	48.6
30	18/30	---	---	ND	---	48.6
31		---	---	ND	---	126
32		---	---	ND	---	24.3
33	21/33	---	---	ND	---	131
34		---	---	ND	---	24.3
35		---	---	ND	---	24.3
36		---	---	ND	---	24.3
37		---	---	ND	---	51.5
38		---	---	ND	---	24.3
39		---	---	ND	---	24.3
40	40/41/71	---	---	ND	---	146
41	40/41/71	---	---	ND	---	146
42		---	---	ND	---	48.6
43	43/73	---	---	ND	---	48.6
44	44/47/65	---	---	ND	---	146
45	45/51	---	---	ND	---	97.1
46		---	---	ND	---	48.6
47	44/47/65	---	---	ND	---	146
48		---	---	ND	---	48.6

Conc = Concentration
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD008-F005
Lab Sample ID 92391723003
Filename P180727A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	97.1
50	50/53	---	---	ND	---	97.1
51	45/51	---	---	ND	---	97.1
52		---	---	ND	---	150
53	50/53	---	---	ND	---	97.1
54		---	---	ND	---	48.6
55		---	---	ND	---	48.6
56		---	---	ND	---	48.6
57		---	---	ND	---	48.6
58		---	---	ND	---	48.6
59	59/62/75	---	---	ND	---	146
60		---	---	ND	---	48.6
61	61/70/74/76	---	---	ND	---	194
62	59/62/75	---	---	ND	---	146
63		---	---	ND	---	48.6
64		---	---	ND	---	48.6
65	44/47/65	---	---	ND	---	146
66		---	---	ND	---	81.6
67		---	---	ND	---	48.6
68		---	---	ND	---	48.6
69	49/69	---	---	ND	---	97.1
70	61/70/74/76	---	---	ND	---	194
71	40/41/71	---	---	ND	---	146
72		---	---	ND	---	48.6
73	43/73	---	---	ND	---	48.6
74	61/70/74/76	---	---	ND	---	194
75	59/62/75	---	---	ND	---	146
76	61/70/74/76	---	---	ND	---	194
77		---	---	ND	---	48.6
78		---	---	ND	---	48.6
79		---	---	ND	---	48.6
80		---	---	ND	---	48.6
81		---	---	ND	---	48.6
82		---	---	ND	---	48.6
83		---	---	ND	---	48.6
84		---	---	ND	---	48.6
85	85/116/117	---	---	ND	---	146
86	86/87/97/108/119/125	---	---	ND	---	291
87	86/87/97/108/119/125	---	---	ND	---	291
88	88/91	---	---	ND	---	97.1
89		---	---	ND	---	48.6
90	90/101/113	---	---	ND	---	146
91	88/91	---	---	ND	---	97.1
92		---	---	ND	---	48.6
93	93/98/100/102	---	---	ND	---	194
94		---	---	ND	---	48.6
95		---	---	ND	---	92.3
96		---	---	ND	---	48.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD008-F005
Lab Sample ID 92391723003
Filename P180727A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	---	---	ND	---	291
98	93/98/100/102	---	---	ND	---	194
99		---	---	ND	---	48.6
100	93/98/100/102	---	---	ND	---	194
101	90/101/113	---	---	ND	---	146
102	93/98/100/102	---	---	ND	---	194
103		---	---	ND	---	48.6
104		---	---	ND	---	48.6
105		---	---	ND	---	48.6
106		---	---	ND	---	48.6
107	107/124	---	---	ND	---	97.1
108	86/87/97/108/119/125	---	---	ND	---	291
109		---	---	ND	---	48.6
110	110/115	---	---	ND	---	97.1
111		---	---	ND	---	48.6
112		---	---	ND	---	48.6
113	90/101/113	---	---	ND	---	146
114		---	---	ND	---	48.6
115	110/115	---	---	ND	---	97.1
116	85/116/117	---	---	ND	---	146
117	85/116/117	---	---	ND	---	146
118		---	---	ND	---	62.2
119	86/87/97/108/119/125	---	---	ND	---	291
120		---	---	ND	---	48.6
121		---	---	ND	---	48.6
122		---	---	ND	---	48.6
123		---	---	ND	---	48.6
124	107/124	---	---	ND	---	97.1
125	86/87/97/108/119/125	---	---	ND	---	291
126		---	---	ND	---	48.6
127		---	---	ND	---	48.6
128	128/166	---	---	ND	---	97.1
129	129/138/163	---	---	ND	---	146
130		---	---	ND	---	48.6
131		---	---	ND	---	48.6
132		---	---	ND	---	48.6
133		---	---	ND	---	48.6
134	134/143	---	---	ND	---	97.1
135	135/151	---	---	ND	---	97.1
136		---	---	ND	---	48.6
137		---	---	ND	---	48.6
138	129/138/163	---	---	ND	---	146
139	139/140	---	---	ND	---	97.1
140	139/140	---	---	ND	---	97.1
141		---	---	ND	---	48.6
142		---	---	ND	---	48.6
143	134/143	---	---	ND	---	97.1
144		---	---	ND	---	48.6

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD008-F005
Lab Sample ID 92391723003
Filename P180727A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	48.6
146		---	---	ND	---	48.6
147	147/149	---	---	ND	---	97.1
148		---	---	ND	---	48.6
149	147/149	---	---	ND	---	97.1
150		---	---	ND	---	48.6
151	135/151	---	---	ND	---	97.1
152		---	---	ND	---	48.6
153	153/168	---	---	ND	---	97.1
154		---	---	ND	---	48.6
155		---	---	ND	---	48.6
156	156/157	---	---	ND	---	97.1
157	156/157	---	---	ND	---	97.1
158		---	---	ND	---	48.6
159		---	---	ND	---	48.6
160		---	---	ND	---	48.6
161		---	---	ND	---	48.6
162		---	---	ND	---	48.6
163	129/138/163	---	---	ND	---	146
164		---	---	ND	---	48.6
165		---	---	ND	---	48.6
166	128/166	---	---	ND	---	97.1
167		---	---	ND	---	48.6
168	153/168	---	---	ND	---	97.1
169		---	---	ND	---	48.6
170		---	---	ND	---	48.6
171	171/173	---	---	ND	---	97.1
172		---	---	ND	---	48.6
173	171/173	---	---	ND	---	97.1
174		---	---	ND	---	48.6
175		---	---	ND	---	48.6
176		---	---	ND	---	48.6
177		---	---	ND	---	48.6
178		---	---	ND	---	48.6
179		---	---	ND	---	48.6
180	180/193	---	---	ND	---	97.1
181		---	---	ND	---	48.6
182		---	---	ND	---	48.6
183	183/185	---	---	ND	---	97.1
184		---	---	ND	---	48.6
185	183/185	---	---	ND	---	97.1
186		---	---	ND	---	48.6
187		---	---	ND	---	48.6
188		---	---	ND	---	48.6
189		---	---	ND	---	48.6
190		---	---	ND	---	48.6
191		---	---	ND	---	48.6
192		---	---	ND	---	48.6

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD008-F005
Lab Sample ID 92391723003
Filename P180727A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	---	---	ND	---	97.1
194		---	---	ND	---	72.9
195		---	---	ND	---	72.9
196		---	---	ND	---	72.9
197	197/200	---	---	ND	---	146
198	198/199	---	---	ND	---	146
199	198/199	---	---	ND	---	146
200	197/200	---	---	ND	---	146
201		---	---	ND	---	72.9
202		---	---	ND	---	72.9
203		---	---	ND	---	72.9
204		---	---	ND	---	72.9
205		---	---	ND	---	72.9
206		---	---	ND	---	72.9
207		---	---	ND	---	72.9
208		---	---	ND	---	72.9
209		---	---	ND	---	72.9

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD008-F005
Lab Sample ID	92391723003
Filename	P180727A_13

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-63507		
Filename	P180723B_07		
Injected By	BAL	Matrix	Soil/Solid (QC Matrix)
Total Amount Extracted	10.7 g	Extracted	07/17/2018 15:00
ICAL ID	P180723B02	Analyzed	07/23/2018 23:24
CCal Filename(s)	P180723B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.576	2.72	2.0	1.23	62
13C-4-MoCB	3	12.427	3.20	2.0	1.14	57
13C-2,2'-DiCB	4	12.739	1.33	2.0	1.13	56
13C-4,4'-DiCB	15	19.903	1.58	2.0	1.39	69
13C-2,2',6-TrCB	19	16.608	1.07	2.0	1.40	70
13C-3,4,4'-TrCB	37	27.711	1.20	2.0	1.81	90
13C-2,2',6,6'-TeCB	54	20.215	0.74	2.0	1.36	68
13C-3,4,4',5-TeCB	81	34.827	0.73	2.0	1.54	77
13C-3,3',4,4'-TeCB	77	35.464	0.76	2.0	1.54	77
13C-2,2',4,6,6'-PeCB	104	26.302	1.63	2.0	1.35	68
13C-2,3,3',4,4'-PeCB	105	39.008	1.51	2.0	1.64	82
13C-2,3,4,4',5-PeCB	114	38.320	1.68	2.0	1.62	81
13C-2,3',4,4',5-PeCB	118	37.784	1.68	2.0	1.54	77
13C-2,3',4,4',5'-PeCB	123	37.432	1.51	2.0	1.63	81
13C-3,3',4,4',5-PeCB	126	42.178	1.54	2.0	1.88	94
13C-2,2',4,4',6,6'-HxCB	155	32.328	1.16	2.0	1.28	64
13C-HxCB (156/157)	156/157	45.218	1.23	4.0	2.86	71
13C-2,3',4,4',5,5'-HxCB	167	44.044	1.38	2.0	1.47	74
13C-3,3',4,4',5,5'-HxCB	169	48.556	1.25	2.0	1.60	80
13C-2,2',3,4',5,6,6'-HpCB	188	38.253	1.05	2.0	1.36	68
13C-2,3,3',4,4',5,5'-HpCB	189	51.050	1.00	2.0	1.50	75
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.726	0.89	2.0	1.48	74
13C-2,3,3',4,4',5,5',6-OcCB	205	53.098	0.93	2.0	1.45	73
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.520	0.74	2.0	1.62	81
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.489	0.81	2.0	1.56	78
13C--DeCB	209	55.986	0.73	2.0	1.57	78
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.301	1.01	2.0	1.59	80
13C-2,3,3',5,5'-PeCB	111	35.397	1.68	2.0	1.49	75
13C-2,2',3,3',5,5',6-HpCB	178	41.389	1.09	2.0	1.65	82
Recovery Standards						
13C-2,5-DiCB	9	15.229	1.58	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.280	0.84	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.597	1.58	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.970	1.31	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.731	0.87	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a total weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	23.4
2		---	---	ND	---	23.4
3		---	---	ND	---	23.4
4		---	---	ND	---	23.4
5		---	---	ND	---	23.4
6		---	---	ND	---	23.4
7		---	---	ND	---	23.4
8		---	---	ND	---	23.4
9		---	---	ND	---	23.4
10		---	---	ND	---	23.4
11		---	---	ND	---	229
12	12/13	---	---	ND	---	46.7
13	12/13	---	---	ND	---	46.7
14		---	---	ND	---	23.4
15		---	---	ND	---	23.4
16		---	---	ND	---	23.4
17		---	---	ND	---	23.4
18	18/30	---	---	ND	---	46.7
19		---	---	ND	---	23.4
20	20/28	---	---	ND	---	121
21	21/33	---	---	ND	---	126
22		---	---	ND	---	88.8
23		---	---	ND	---	23.4
24		---	---	ND	---	23.4
25		---	---	ND	---	23.4
26	26/29	---	---	ND	---	46.7
27		---	---	ND	---	23.4
28	20/28	---	---	ND	---	121
29	26/29	---	---	ND	---	46.7
30	18/30	---	---	ND	---	46.7
31		---	---	ND	---	121
32		---	---	ND	---	23.4
33	21/33	---	---	ND	---	126
34		---	---	ND	---	23.4
35		---	---	ND	---	23.4
36		---	---	ND	---	23.4
37		---	---	ND	---	49.5
38		---	---	ND	---	23.4
39		---	---	ND	---	23.4
40	40/41/71	---	---	ND	---	140
41	40/41/71	---	---	ND	---	140
42		---	---	ND	---	46.7
43	43/73	---	---	ND	---	46.7
44	44/47/65	---	---	ND	---	140
45	45/51	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

Results reported on a total weight basis

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46		---	---	ND	---	46.7
47	44/47/65	---	---	ND	---	140
48		---	---	ND	---	46.7
49	49/69	---	---	ND	---	93.5
50	50/53	---	---	ND	---	93.5
51	45/51	---	---	ND	---	93.5
52		---	---	ND	---	144
53	50/53	---	---	ND	---	93.5
54		---	---	ND	---	46.7
55		---	---	ND	---	46.7
56		---	---	ND	---	46.7
57		---	---	ND	---	46.7
58		---	---	ND	---	46.7
59	59/62/75	---	---	ND	---	140
60		---	---	ND	---	46.7
61	61/70/74/76	---	---	ND	---	187
62	59/62/75	---	---	ND	---	140
63		---	---	ND	---	46.7
64		---	---	ND	---	46.7
65	44/47/65	---	---	ND	---	140
66		---	---	ND	---	78.5
67		---	---	ND	---	46.7
68		---	---	ND	---	46.7
69	49/69	---	---	ND	---	93.5
70	61/70/74/76	---	---	ND	---	187
71	40/41/71	---	---	ND	---	140
72		---	---	ND	---	46.7
73	43/73	---	---	ND	---	46.7
74	61/70/74/76	---	---	ND	---	187
75	59/62/75	---	---	ND	---	140
76	61/70/74/76	---	---	ND	---	187
77		---	---	ND	---	46.7
78		---	---	ND	---	46.7
79		---	---	ND	---	46.7
80		---	---	ND	---	46.7
81		---	---	ND	---	46.7
82		---	---	ND	---	46.7
83		---	---	ND	---	46.7
84		---	---	ND	---	46.7
85	85/116/117	---	---	ND	---	140
86	86/87/97/108/119/125	---	---	ND	---	280
87	86/87/97/108/119/125	---	---	ND	---	280
88	88/91	---	---	ND	---	93.5
89		---	---	ND	---	46.7
90	90/101/113	---	---	ND	---	140

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
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Results reported on a total weight basis

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91	---	---	ND	---	93.5
92		---	---	ND	---	46.7
93	93/98/100/102	---	---	ND	---	187
94		---	---	ND	---	46.7
95		---	---	ND	---	88.8
96		---	---	ND	---	46.7
97	86/87/97/108/119/125	---	---	ND	---	280
98	93/98/100/102	---	---	ND	---	187
99		---	---	ND	---	46.7
100	93/98/100/102	---	---	ND	---	187
101	90/101/113	---	---	ND	---	140
102	93/98/100/102	---	---	ND	---	187
103		---	---	ND	---	46.7
104		---	---	ND	---	46.7
105		---	---	ND	---	46.7
106		---	---	ND	---	46.7
107	107/124	---	---	ND	---	93.5
108	86/87/97/108/119/125	---	---	ND	---	280
109		---	---	ND	---	46.7
110	110/115	---	---	ND	---	93.5
111		---	---	ND	---	46.7
112		---	---	ND	---	46.7
113	90/101/113	---	---	ND	---	140
114		---	---	ND	---	46.7
115	110/115	---	---	ND	---	93.5
116	85/116/117	---	---	ND	---	140
117	85/116/117	---	---	ND	---	140
118		---	---	ND	---	59.8
119	86/87/97/108/119/125	---	---	ND	---	280
120		---	---	ND	---	46.7
121		---	---	ND	---	46.7
122		---	---	ND	---	46.7
123		---	---	ND	---	46.7
124	107/124	---	---	ND	---	93.5
125	86/87/97/108/119/125	---	---	ND	---	280
126		---	---	ND	---	46.7
127		---	---	ND	---	46.7
128	128/166	---	---	ND	---	93.5
129	129/138/163	---	---	ND	---	140
130		---	---	ND	---	46.7
131		---	---	ND	---	46.7
132		---	---	ND	---	46.7
133		---	---	ND	---	46.7
134	134/143	---	---	ND	---	93.5
135	135/151	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
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* = See Discussion
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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136		---	---	ND	---	46.7
137		---	---	ND	---	46.7
138	129/138/163	---	---	ND	---	140
139	139/140	---	---	ND	---	93.5
140	139/140	---	---	ND	---	93.5
141		---	---	ND	---	46.7
142		---	---	ND	---	46.7
143	134/143	---	---	ND	---	93.5
144		---	---	ND	---	46.7
145		---	---	ND	---	46.7
146		---	---	ND	---	46.7
147	147/149	---	---	ND	---	93.5
148		---	---	ND	---	46.7
149	147/149	---	---	ND	---	93.5
150		---	---	ND	---	46.7
151	135/151	---	---	ND	---	93.5
152		---	---	ND	---	46.7
153	153/168	---	---	ND	---	93.5
154		---	---	ND	---	46.7
155		---	---	ND	---	46.7
156	156/157	---	---	ND	---	93.5
157	156/157	---	---	ND	---	93.5
158		---	---	ND	---	46.7
159		---	---	ND	---	46.7
160		---	---	ND	---	46.7
161		---	---	ND	---	46.7
162		---	---	ND	---	46.7
163	129/138/163	---	---	ND	---	140
164		---	---	ND	---	46.7
165		---	---	ND	---	46.7
166	128/166	---	---	ND	---	93.5
167		---	---	ND	---	46.7
168	153/168	---	---	ND	---	93.5
169		---	---	ND	---	46.7
170		---	---	ND	---	46.7
171	171/173	---	---	ND	---	93.5
172		---	---	ND	---	46.7
173	171/173	---	---	ND	---	93.5
174		---	---	ND	---	46.7
175		---	---	ND	---	46.7
176		---	---	ND	---	46.7
177		---	---	ND	---	46.7
178		---	---	ND	---	46.7
179		---	---	ND	---	46.7
180	180/193	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
181		---	---	ND	---	46.7
182		---	---	ND	---	46.7
183	183/185	---	---	ND	---	93.5
184		---	---	ND	---	46.7
185	183/185	---	---	ND	---	93.5
186		---	---	ND	---	46.7
187		---	---	ND	---	46.7
188		---	---	ND	---	46.7
189		---	---	ND	---	46.7
190		---	---	ND	---	46.7
191		---	---	ND	---	46.7
192		---	---	ND	---	46.7
193	180/193	---	---	ND	---	93.5
194		---	---	ND	---	70.1
195		---	---	ND	---	70.1
196		---	---	ND	---	70.1
197	197/200	---	---	ND	---	140
198	198/199	---	---	ND	---	140
199	198/199	---	---	ND	---	140
200	197/200	---	---	ND	---	140
201		---	---	ND	---	70.1
202		---	---	ND	---	70.1
203		---	---	ND	---	70.1
204		---	---	ND	---	70.1
205		---	---	ND	---	70.1
206		---	---	ND	---	70.1
207		---	---	ND	---	70.1
208		---	---	ND	---	70.1
209		---	---	ND	---	70.1

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
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Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKSW
Lab Sample ID	BLANK-63507
Filename	P180723B_07

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a total weight basis

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Minneapolis, MN 55414

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-63508		
Filename	P180723B_03	Matrix	Soil/Solid (QC Matrix)
Total Amount Extracted	10.0 g	Dilution	NA
ICAL ID	P180723B02	Extracted	07/17/2018 15:00
CCal Filename(s)	P180723B_01	Analyzed	07/23/2018 19:25
Method Blank ID	BLANK-63507	Injected By	BAL

	Native Analytes				Labeled Analytes		
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery		Spiked (ng)	Found (ng)	% Recovery
1	1.0	0.926	93		2.0	1.17	58
3	1.0	0.991	99		2.0	1.12	56
4	1.0	0.964	125	I	2.0	1.16	58
15	1.0	0.831	83		2.0	1.26	63
19	1.0	0.658	73	I	2.0	1.58	79
37	1.0	0.769	77		2.0	1.33	66
54	1.0	0.764	76		2.0	1.21	61
81	1.0	0.931	93		2.0	1.30	65
77	1.0	0.847	85		2.0	1.35	68
104	1.0	0.979	98		2.0	1.13	56
105	1.0	0.984	98		2.0	1.44	72
114	1.0	0.845	92	I	2.0	1.40	70
118	1.0	0.916	92		2.0	1.42	71
123	1.0	1.04	104		2.0	1.43	72
126	1.0	0.963	96		2.0	1.58	79
155	1.0	0.962	96		2.0	1.10	55
156/157	2.0	1.95	98		4.0	2.68	67
167	1.0	0.973	97		2.0	1.29	64
169	1.0	0.925	93		2.0	1.62	81
188	1.0	0.948	95		2.0	1.13	56
189	1.0	0.902	90		2.0	1.48	74
202	1.0	0.922	92		2.0	1.25	63
205	1.0	1.07	107		2.0	1.41	71
206	1.0	1.04	104		2.0	1.37	69
208	1.0	1.01	101		2.0	1.32	66
209	1.0	0.974	97		2.0	1.45	72

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-63509		
Filename	P180723B_04	Matrix	Solid
Total Amount Extracted	10.1 g	Dilution	NA
ICAL ID	P180723B02	Extracted	07/17/2018 15:00
CCal Filename(s)	P180723B_01	Analyzed	07/23/2018 20:25
Method Blank ID	BLANK-63507	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.04	104	2.0	1.18	59	
3	1.0	0.920	92	2.0	1.30	65	
4	1.0	1.00	100	2.0	1.40	70	
15	1.0	1.04	104	2.0	1.47	74	
19	1.0	0.719	72	2.0	1.97	98	
37	1.0	0.714	71	2.0	1.56	87	I
54	1.0	0.901	90	2.0	1.34	67	
81	1.0	0.842	84	2.0	1.50	75	
77	1.0	0.816	82	2.0	1.66	83	
104	1.0	1.02	102	2.0	1.38	69	
105	1.0	0.987	99	2.0	1.69	84	
114	1.0	0.953	95	2.0	1.61	80	
118	1.0	0.933	93	2.0	1.62	81	
123	1.0	0.940	94	2.0	1.61	81	
126	1.0	0.866	87	2.0	1.96	98	
155	1.0	0.919	92	2.0	1.38	69	
156/157	2.0	1.80	90	4.0	3.16	79	
167	1.0	0.933	93	2.0	1.60	80	
169	1.0	0.949	95	2.0	1.73	86	
188	1.0	1.05	105	2.0	1.41	71	
189	1.0	0.888	89	2.0	1.71	85	
202	1.0	0.972	97	2.0	1.64	82	
205	1.0	1.02	102	2.0	1.60	80	
206	1.0	0.987	99	2.0	1.63	82	
208	1.0	1.01	101	2.0	1.64	82	
209	1.0	1.01	101	2.0	1.76	88	

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63508	Spike 2 ID	LCSD-63509
Spike 1 Filename	P180723B_03	Spike 2 Filename	P180723B_04

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	93	104	11.2
4-MoCB	3	99	92	7.3
2,2'-DiCB	4	125	100	22.2
4,4'-DiCB	15	83	104	22.5
2,2',6-TrCB	19	73	72	1.4
3,4,4'-TrCB	37	77	71	8.1
2,2',6,6'-TeCB	54	76	90	16.9
3,3',4,4'-TeCB	77	85	82	3.6
3,4,4',5-TeCB	81	93	84	10.2
2,2',4,6,6'-PeCB	104	98	102	4.0
2,3,3',4,4'-PeCB	105	98	99	1.0
2,3,4,4',5-PeCB	114	92	95	3.2
2,3',4,4',5-PeCB	118	92	93	1.1
2,3',4,4',5'-PeCB	123	104	94	10.1
3,3',4,4',5-PeCB	126	96	87	9.8
2,2',4,4',6,6'-HxCB	155	96	92	4.3
(156/157)	156/157	98	90	8.5
2,3',4,4',5,5'-HxCB	167	97	93	4.2
3,3',4,4',5,5'-HxCB	169	93	95	2.1
2,2',3,4',5,6,6'-HpCB	188	95	105	10.0
2,3,3',4,4',5,5'-HpCB	189	90	89	1.1
2,2',3,3',5,5',6,6'-OcCB	202	92	97	5.3
2,3,3',4,4',5,5',6-OcCB	205	107	102	4.8
2,2',3,3',4,4',5,5',6-NoCB	206	104	99	4.9
2,2',3,3',4,5,5',6,6'-NoCB	208	101	101	0.0
Decachlorobiphenyl	209	97	101	4.0

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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(704)875-9092

July 26, 2018

Michael W. Worden
Environeering, Inc.
16100 Cairnway
Suite 320
Houston, TX 77084

RE: Project: Little Mountain Creek SW
Pace Project No.: 92391738

Dear Michael Worden:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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CERTIFICATIONS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92391738001	**ABL-SW008-F005**	Water	07/12/18 00:00	07/12/18 12:30
92391738002	**ABL-SW008-D005**	Water	07/12/18 00:00	07/12/18 12:30
92391738003	**ABL-SW009-F005**	Water	07/12/18 00:00	07/12/18 12:30
92391738004	**ABL-SW010-F005**	Water	07/12/18 00:00	07/12/18 12:30
92391738005	**ABL-SW011-F005**	Water	07/12/18 00:00	07/12/18 12:30
92391738006	**ABL-SW012-F005**	Water	07/12/18 00:00	07/12/18 12:30

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SAMPLE ANALYTE COUNT

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92391738001	**ABL-SW008-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
92391738002	**ABL-SW008-D005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
92391738003	**ABL-SW009-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
92391738004	**ABL-SW010-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
92391738005	**ABL-SW011-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
92391738006	**ABL-SW012-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	3	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW008-F005 **Lab ID: 92391738001** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:21	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	55	%	10-132		1	07/12/18 19:40	07/16/18 20:21	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:16	7440-38-2	
Lead	**2.6J**	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:16	7439-92-1	
Hardness, Total(SM 2340B)	**37800**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:16		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.088J**	mg/L	0.10	0.050	1		07/21/18 00:42	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:35	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW008-D005 **Lab ID: 92391738002** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:34	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	57	%	10-132		1	07/12/18 19:40	07/16/18 20:34	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:19	7440-38-2	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:19	7439-92-1	
Hardness, Total(SM 2340B)	**38500**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.087J**	mg/L	0.10	0.050	1		07/21/18 02:08	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:38	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW009-F005 **Lab ID: 92391738003** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 20:47	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	62	%	10-132		1	07/12/18 19:40	07/16/18 20:47	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:22	7440-38-2	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:22	7439-92-1	
Hardness, Total(SM 2340B)	**36600**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:22		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.078J**	mg/L	0.10	0.050	1		07/21/18 02:25	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:39	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW010-F005 **Lab ID: 92391738004** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:00	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	51	%	10-132		1	07/12/18 19:40	07/16/18 21:00	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:25	7440-38-2	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:25	7439-92-1	
Hardness, Total(SM 2340B)	**36000**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:25		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.074J**	mg/L	0.10	0.050	1		07/21/18 02:42	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:39	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW011-F005 **Lab ID: 92391738005** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:13	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	47	%	10-132		1	07/12/18 19:40	07/16/18 21:13	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:28	7440-38-2	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:28	7439-92-1	
Hardness, Total(SM 2340B)	**37300**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.078J**	mg/L	0.10	0.050	1		07/21/18 02:59	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:40	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Sample: ABL-SW012-F005 **Lab ID: 92391738006** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 21:25	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	59	%	10-132		1	07/12/18 19:40	07/16/18 21:25	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 06:31	7440-38-2	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 06:31	7439-92-1	
Hardness, Total(SM 2340B)	**39200**	ug/L	662	662	1	07/13/18 05:20	07/14/18 06:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.082J**	mg/L	0.10	0.050	1		07/21/18 03:16	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	ND	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:41	57-12-5	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Little Mountain Creek SW
Pace Project No.: 92391738

QC Batch: 418970 | Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 | Analysis Description: 200.7 MET
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

METHOD BLANK: 2322463 | Matrix: Water
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	5.0	07/14/18 05:44	
Hardness, Total(SM 2340B)	ug/L	ND	662	662	07/14/18 05:44	
Lead	ug/L	ND	5.0	2.5	07/14/18 05:44	

LABORATORY CONTROL SAMPLE: 2322464

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	500	434	87	85-115	
Hardness, Total(SM 2340B)	ug/L		31800			
Lead	ug/L	500	449	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322465 2322466

Parameter	Units	92391732001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	500	500	456	451	91	90	70-130	1	20	
Hardness, Total(SM 2340B)	ug/L	39300			72400	72100				0	20	
Lead	ug/L	ND	500	500	450	448	90	90	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322467 2322468

Parameter	Units	92391750001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	500	500	464	469	93	94	70-130	1	20	
Hardness, Total(SM 2340B)	ug/L	25900			58300	58700				1	20	
Lead	ug/L	ND	500	500	450	451	90	90	70-130	0	20	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW
Pace Project No.: 92391738

QC Batch: 418714 | Analysis Method: EPA 8082A
QC Batch Method: EPA 3510C | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

METHOD BLANK: 2321052 | Matrix: Water
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	07/16/18 23:33	
Decachlorobiphenyl (S)	%	73	10-132		07/16/18 23:33	

LABORATORY CONTROL SAMPLE & LCSD: 2321053 2321054

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.6	3.4	72	68	50-150	6	30	
PCB-1260 (Aroclor 1260)	ug/L	5	4.0	3.7	80	74	50-150	9	30	
Decachlorobiphenyl (S)	%				76	81	10-132			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW
Pace Project No.: 92391738

QC Batch: 420255 | Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

METHOD BLANK: 2328345 | Matrix: Water
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	07/21/18 00:08	

LABORATORY CONTROL SAMPLE: 2328346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2328347 2328348

Parameter	Units	92391738001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.088J	2.5	2.5	2.5	2.5	96	96	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2328349 2328350

Parameter	Units	92392497005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.14	2.5	2.5	2.5	2.6	96	97	90-110	1	10	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW
Pace Project No.: 92391738

QC Batch: 419425 | Analysis Method: EPA 9012B
QC Batch Method: EPA 9012B | Analysis Description: EPA 9012B Cyanide
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

METHOD BLANK: 2324546 | Matrix: Water
Associated Lab Samples: 92391738001, 92391738002, 92391738003, 92391738004, 92391738005, 92391738006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	0.0040	07/17/18 15:18	

LABORATORY CONTROL SAMPLE: 2324547

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.092	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324548 2324549

Parameter	Units	92391628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.064	.1	.1	0.15	0.15	87	90	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324550 2324551

Parameter	Units	92391634008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.095	0.092	95	92	75-125	3	20	

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QUALIFIERS

Project: Little Mountain Creek SW
Pace Project No.: 92391738

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Little Mountain Creek SW
Pace Project No.: 92391738

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92391738001	**ABL-SW008-F005**	EPA 3510C	418714	EPA 8082A	419331
92391738002	**ABL-SW008-D005**	EPA 3510C	418714	EPA 8082A	419331
92391738003	**ABL-SW009-F005**	EPA 3510C	418714	EPA 8082A	419331
92391738004	**ABL-SW010-F005**	EPA 3510C	418714	EPA 8082A	419331
92391738005	**ABL-SW011-F005**	EPA 3510C	418714	EPA 8082A	419331
92391738006	**ABL-SW012-F005**	EPA 3510C	418714	EPA 8082A	419331
92391738001	**ABL-SW008-F005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738002	**ABL-SW008-D005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738003	**ABL-SW009-F005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738004	**ABL-SW010-F005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738005	**ABL-SW011-F005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738006	**ABL-SW012-F005**	EPA 200.7 Rev 4.4 1994	418970	EPA 200.7 Rev 4.4 1994	419048
92391738001	**ABL-SW008-F005**	EPA 300.0 Rev 2.1 1993	420255		
92391738002	**ABL-SW008-D005**	EPA 300.0 Rev 2.1 1993	420255		
92391738003	**ABL-SW009-F005**	EPA 300.0 Rev 2.1 1993	420255		
92391738004	**ABL-SW010-F005**	EPA 300.0 Rev 2.1 1993	420255		
92391738005	**ABL-SW011-F005**	EPA 300.0 Rev 2.1 1993	420255		
92391738006	**ABL-SW012-F005**	EPA 300.0 Rev 2.1 1993	420255		
92391738001	**ABL-SW008-F005**	EPA 9012B	419425	EPA 9012B	419520
92391738002	**ABL-SW008-D005**	EPA 9012B	419425	EPA 9012B	419520
92391738003	**ABL-SW009-F005**	EPA 9012B	419425	EPA 9012B	419520
92391738004	**ABL-SW010-F005**	EPA 9012B	419425	EPA 9012B	419520
92391738005	**ABL-SW011-F005**	EPA 9012B	419425	EPA 9012B	419520
92391738006	**ABL-SW012-F005**	EPA 9012B	419425	EPA 9012B	419520

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Pace Analytical	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐

Sample Condition Upon Receipt

Client Name: Environmental

Project # **WO# : 92391738**

92391738

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☑ USPS ☐ Other:____ ☑ Client

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: AD 7-12-18

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T040 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 2.3-2.9 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 2.7-3.3

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on Ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (Internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☑ No	☐ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: ACP **Date:** 07/12/18

Project Manager SRF Review: NMG **Date:** 7/12/18

Pace Analytical®	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO#: 92391738

PM: NMG Due Date: 07/26/18

CLIENT: 92-Alcoa

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1				1		1		2																2		
2		1				1		1		2																2		
3		1				1		1		2																2		
4		1				1		1		2																2		
5		1				1		1		2																2		
6		1				1		1		2																2		
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:

Company:	Environeering
Address:	138 Fort Jackson Road
	Morrisville, NC 27560
Email:	M. WALDON
Phone: 8326741880	Fax:
Requested Due Date:	

Section B Required Project Information:

Report To:	Michael Worden
Copy To:	
Purchase Order #:	
Project Name:	Little Mountain Creek - SW
Project #:	137-263

Section C Invoice Information:

Attention:	
Company Name:	ENVIRONEERING
Address:	HOUSTON, TX
Pace Quote:	
Pace Project Manager:	nicole.gasiorowski@pacelabs.com,
Pace Profile #:	7478

Regulatory Agency	State / Location
	NC

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): 9012 Cyanide	300.0 Fluoride	00.7 (Pb/As/Hardness)	8082 PCB Aroclors	1668 PCB congeners	Residual Chlorine (Y/N)	92391738
1	ABL-SW008-F005	WT	C	—	—	7/12			7			X		X				X	X	X	X	X		001
2	ABL-SW008-D005	WT	G	—	—	7/12			7			X		X				X	X	X	X	X		002
3	ABL-SW009-F005	WT	G	—	—	7/12			7			X		X				X	X	X	X	X		003
4	ABL-SW010-F005	WT	G	—	—	7/12			7			X		X				X	X	X	X	X		004
5	ABL-SW011-F005	WT	G	—	—	7/12			7			X		X				X	X	X	X	X		005
6	ABL-SW012-F005	WT	G	—	—	7/12			7			X		X				X	X	X	X	X		006
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature] ENVIRONEERING	7/12/18	1115	[signature] / Environeering	7/12/18	1115
	[signature] Environeering	7/12/18	1230	[signature] Pace	7-12-18	1230

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
27	Y	N	Y
33			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michael Waldon

SIGNATURE of SAMPLER: [signature] DATE Signed: 7/12/18

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client - Charlotte
PACE Charlotte
9800 Kincey Ave.
Huntersville NC 28078

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date:
July 25, 2018

Report Information:

Pace Project #: 10439554
Sample Receipt Date: 07/14/2018
Client Project #: 92391738 Alcoa-Badin Works (
Client Sub PO #: N/A
State Cert #: 27700

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:

July 26, 2018
Nathan Boberg, Project Manager

(612) 607-6444 (fax)
nathan.boberg@pacelabs.com

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of Pace Analytical - NC. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to 0.25-0.75 parts-per-trillion and were adjusted for the amount of sample extracted.

The dilution level noted on the data tables is being adjusted to allow the correct data flags to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume. The standard reporting limits were not adjusted since the limits remained within the calibration range even after dilutions were applied.

The recoveries of the isotopically-labeled PCB internal standards in the sample extracts ranged from 37-97%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained. Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results table.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the PCB content of the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 81-113%, with relative percent differences of 0.0-14.9%. These values were within method limits. Matrix spikes were not extracted with this sample batch.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

WO# : 10439554

10439554

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NC

Workorder: 92391738 **Workorder Name:** Little Mountain Creek SW **Owner Received Date:** 7/12/2018 **Results Requested By:** 7/26/2018

Report To

Nicole Gasiorowski
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Subcontract To

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1668 209 PCB Congeners	LAB USE ONLY
1	ABL-SW008-F005	PS	7/12/2018 00:00	92391738001	Water	2	X	001
2	ABL-SW008-D005	PS	7/12/2018 00:00	92391738002	Water	2	X	002
3	ABL-SW009-F005	PS	7/12/2018 00:00	92391738003	Water	2	X	003
4	ABL-SW010-F005	PS	7/12/2018 00:00	92391738004	Water	2	X	004
5	ABL-SW011-F005	PS	7/12/2018 00:00	92391738005	Water	2	X	005
6	ABL-SW-012-F005	PS	7/12/2018 00:00	92391738006	Water	2	X	006

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] 7/13/18	1PM	[signature] Pace	7-14-18 930
2				
3				

Comments

Cooler Temperature on Receipt * °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

2.1, 4.3, 2.1

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace NC

Project #: WO#: 10439554

PM: NB3 Due Date: 07/30/18

CLIENT: PASI-CHRLT

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4394 2203 4678, 4667 4650 LR 7-14-18

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 2.1, 4.3 2.1 **Cooler Temp Corrected (°C):** 2.1, 4.3, 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** LR 7-14-18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested? LR 7-14-18	~~☒ Yes~~	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nathan Boberg **Date:** 7/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW008-F005		
Lab Sample ID	92391738001		
Filename	P180721B_08		
Injected By	BAL		
Total Amount Extracted	921 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 00:53

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	3.23	2.0	0.779	39
13C-4-MoCB	3	12.427	2.72	2.0	0.910	46
13C-2,2'-DiCB	4	12.739	1.50	2.0	0.835	42
13C-4,4'-DiCB	15	19.878	1.60	2.0	1.02	51
13C-2,2',6-TrCB	19	16.559	1.13	2.0	0.936	47
13C-3,4,4'-TrCB	37	27.693	1.15	2.0	1.11	55
13C-2,2',6,6'-TeCB	54	20.198	0.84	2.0	0.770	38
13C-3,4,4',5-TeCB	81	34.808	0.86	2.0	1.21	61
13C-3,3',4,4'-TeCB	77	35.429	0.79	2.0	1.15	58
13C-2,2',4,6,6'-PeCB	104	26.301	1.54	2.0	0.865	43
13C-2,3,3',4,4'-PeCB	105	39.006	1.71	2.0	1.42	71
13C-2,3,4,4',5-PeCB	114	38.335	1.53	2.0	1.36	68
13C-2,3',4,4',5-PeCB	118	37.782	1.62	2.0	1.32	66
13C-2,3',4,4',5'-PeCB	123	37.430	1.52	2.0	1.40	70
13C-3,3',4,4',5-PeCB	126	42.192	1.65	2.0	1.46	73
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.25	2.0	0.893	45
13C-HxCB(156/157)	156/157	45.249	1.30	4.0	2.56	64
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.26	2.0	1.24	62
13C-3,3',4,4',5,5'-HxCB	169	48.536	1.25	2.0	1.41	71
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	1.02	2.0	1.08	54
13C-2,3,3',4,4',5,5'-HpCB	189	51.047	1.16	2.0	1.45	73
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.91	2.0	1.17	59
13C-2,3,3',4,4',5,5',6-OcCB	205	53.095	0.93	2.0	1.32	66
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.539	0.73	2.0	1.24	62
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.508	0.85	2.0	1.21	60
13C--DeCB	209	55.983	0.75	2.0	1.19	59
CleanupStandards						
13C-2,4,4'-TrCB	28	23.283	1.01	2.0	1.52	76
13C-2,3,3',5,5'-PeCB	111	35.379	1.65	2.0	1.41	71
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.03	2.0	1.31	65
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.55	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.278	0.78	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.595	1.54	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.728	1.00	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-F005
Lab Sample ID 92391738001
Filename P180721B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.271
2		---	---	ND	---	0.271
3		---	---	ND	---	0.271
4		12.739	1.59	0.357	---	0.271
5		---	---	ND	---	0.271
6		---	---	ND	---	0.271
7		---	---	ND	---	0.271
8		16.248	1.38	0.331	---	0.271
9		---	---	ND	---	0.271
10		---	---	ND	---	0.271
11		---	---	ND	---	2.66
12	12/13	---	---	ND	---	0.543
13	12/13	---	---	ND	---	0.543
14		---	---	ND	---	0.271
15		19.902	1.54	0.959	---	0.358
16		---	---	ND	---	0.271
17		19.291	1.07	0.694	---	0.271
18	18/30	---	---	ND	---	0.543
19		16.595	1.19	0.289	---	0.271
20	20/28	23.316	1.06	1.43	---	1.40
21	21/33	---	---	ND	---	1.47
22		---	---	ND	---	1.03
23		---	---	ND	---	0.271
24		---	---	ND	---	0.271
25		---	---	ND	---	0.271
26	26/29	---	---	ND	---	0.543
27		---	---	ND	---	0.271
28	20/28	23.316	1.06	(1.43)	---	1.40
29	26/29	---	---	ND	---	0.543
30	18/30	---	---	ND	---	0.543
31		---	---	ND	---	1.41
32		20.415	1.05	0.519	---	0.271
33	21/33	---	---	ND	---	1.47
34		---	---	ND	---	0.271
35		---	---	ND	---	0.271
36		---	---	ND	---	0.271
37		---	---	ND	---	0.575
38		---	---	ND	---	0.271
39		---	---	ND	---	0.271
40	40/41/71	---	---	ND	---	1.63
41	40/41/71	---	---	ND	---	1.63
42		26.955	0.76	0.615	---	0.543
43	43/73	---	---	ND	---	0.543
44	44/47/65	26.452	0.79	2.92	---	1.63
45	45/51	---	---	ND	---	1.09
46		---	---	ND	---	0.543
47	44/47/65	26.452	0.79	(2.92)	---	1.63
48		---	---	ND	---	0.543

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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Pace Analytical Services, LLC
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Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-F005
Lab Sample ID 92391738001
Filename P180721B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	25.832	0.77	1.77	---	1.09
50	50/53	---	---	ND	---	1.09
51	45/51	---	---	ND	---	1.09
52		25.312	0.76	2.21	---	1.67
53	50/53	---	---	ND	---	1.09
54		---	---	ND	---	0.543
55		---	---	ND	---	0.543
56		31.538	0.75	1.27	---	0.543
57		---	---	ND	---	0.543
58		---	---	ND	---	0.543
59	59/62/75	---	---	ND	---	1.63
60		---	---	ND	---	0.543
61	61/70/74/76	30.465	0.78	3.79	---	2.17
62	59/62/75	---	---	ND	---	1.63
63		---	---	ND	---	0.543
64		27.726	0.78	1.06	---	0.543
65	44/47/65	26.452	0.79	(2.92)	---	1.63
66		30.801	0.81	3.19	---	0.912
67		---	---	ND	---	0.543
68		---	---	ND	---	0.543
69	49/69	25.832	0.77	(1.77)	---	1.09
70	61/70/74/76	30.465	0.78	(3.79)	---	2.17
71	40/41/71	---	---	ND	---	1.63
72		---	---	ND	---	0.543
73	43/73	---	---	ND	---	0.543
74	61/70/74/76	30.465	0.78	(3.79)	---	2.17
75	59/62/75	---	---	ND	---	1.63
76	61/70/74/76	30.465	0.78	(3.79)	---	2.17
77		---	---	ND	---	0.543
78		---	---	ND	---	0.543
79		---	---	ND	---	0.543
80		---	---	ND	---	0.543
81		---	---	ND	---	0.543
82		---	---	ND	---	0.543
83		---	---	ND	---	0.543
84		---	---	ND	---	0.543
85	85/116/117	---	---	ND	---	1.63
86	86/87/97/108/119/125	---	---	ND	---	3.26
87	86/87/97/108/119/125	---	---	ND	---	3.26
88	88/91	---	---	ND	---	1.09
89		---	---	ND	---	0.543
90	90/101/113	32.629	1.66	1.74	---	1.63
91	88/91	---	---	ND	---	1.09
92		---	---	ND	---	0.543
93	93/98/100/102	---	---	ND	---	2.17
94		---	---	ND	---	0.543
95		29.526	1.50	1.25	---	1.03
96		---	---	ND	---	0.543

Conc = Concentration
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Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-F005
Lab Sample ID 92391738001
Filename P180721B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.26
98	93/98/100/102	---	---	ND	---	2.17
99		33.232	1.52	1.39	---	0.543
100	93/98/100/102	---	---	ND	---	2.17
101	90/101/113	32.629	1.66	(1.74)	---	1.63
102	93/98/100/102	---	---	ND	---	2.17
103		---	---	ND	---	0.543
104		---	---	ND	---	0.543
105		39.039	1.52	0.897	---	0.543
106		---	---	ND	---	0.543
107	107/124	---	---	ND	---	1.09
108	86/87/97/108/119/125	---	---	ND	---	3.26
109		---	---	ND	---	0.543
110	110/115	34.691	1.53	2.34	---	1.09
111		---	---	ND	---	0.543
112		---	---	ND	---	0.543
113	90/101/113	32.629	1.66	(1.74)	---	1.63
114		---	---	ND	---	0.543
115	110/115	34.691	1.53	(2.34)	---	1.09
116	85/116/117	---	---	ND	---	1.63
117	85/116/117	---	---	ND	---	1.63
118		37.799	1.47	1.74	---	0.695
119	86/87/97/108/119/125	---	---	ND	---	3.26
120		---	---	ND	---	0.543
121		---	---	ND	---	0.543
122		---	---	ND	---	0.543
123		---	---	ND	---	0.543
124	107/124	---	---	ND	---	1.09
125	86/87/97/108/119/125	---	---	ND	---	3.26
126		---	---	ND	---	0.543
127		---	---	ND	---	0.543
128	128/166	---	---	ND	---	1.09
129	129/138/163	---	---	ND	---	1.63
130		---	---	ND	---	0.543
131		---	---	ND	---	0.543
132		---	---	ND	---	0.543
133		---	---	ND	---	0.543
134	134/143	---	---	ND	---	1.09
135	135/151	---	---	ND	---	1.09
136		---	---	ND	---	0.543
137		---	---	ND	---	0.543
138	129/138/163	---	---	ND	---	1.63
139	139/140	---	---	ND	---	1.09
140	139/140	---	---	ND	---	1.09
141		---	---	ND	---	0.543
142		---	---	ND	---	0.543
143	134/143	---	---	ND	---	1.09
144		---	---	ND	---	0.543

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-F005
Lab Sample ID 92391738001
Filename P180721B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.543
146		---	---	ND	---	0.543
147	147/149	---	---	ND	---	1.09
148		---	---	ND	---	0.543
149	147/149	---	---	ND	---	1.09
150		---	---	ND	---	0.543
151	135/151	---	---	ND	---	1.09
152		---	---	ND	---	0.543
153	153/168	---	---	ND	---	1.09
154		---	---	ND	---	0.543
155		---	---	ND	---	0.543
156	156/157	---	---	ND	---	1.09
157	156/157	---	---	ND	---	1.09
158		---	---	ND	---	0.543
159		---	---	ND	---	0.543
160		---	---	ND	---	0.543
161		---	---	ND	---	0.543
162		---	---	ND	---	0.543
163	129/138/163	---	---	ND	---	1.63
164		---	---	ND	---	0.543
165		---	---	ND	---	0.543
166	128/166	---	---	ND	---	1.09
167		---	---	ND	---	0.543
168	153/168	---	---	ND	---	1.09
169		---	---	ND	---	0.543
170		---	---	ND	---	0.543
171	171/173	---	---	ND	---	1.09
172		---	---	ND	---	0.543
173	171/173	---	---	ND	---	1.09
174		---	---	ND	---	0.543
175		---	---	ND	---	0.543
176		---	---	ND	---	0.543
177		---	---	ND	---	0.543
178		---	---	ND	---	0.543
179		---	---	ND	---	0.543
180	180/193	---	---	ND	---	1.09
181		---	---	ND	---	0.543
182		---	---	ND	---	0.543
183	183/185	---	---	ND	---	1.09
184		---	---	ND	---	0.543
185	183/185	---	---	ND	---	1.09
186		---	---	ND	---	0.543
187		---	---	ND	---	0.543
188		---	---	ND	---	0.543
189		---	---	ND	---	0.543
190		---	---	ND	---	0.543
191		---	---	ND	---	0.543
192		---	---	ND	---	0.543

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-F005
Lab Sample ID 92391738001
Filename P180721B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.09
194		---	---	ND	---	0.814
195		---	---	ND	---	0.814
196		---	---	ND	---	0.814
197	197/200	---	---	ND	---	1.63
198	198/199	---	---	ND	---	1.63
199	198/199	---	---	ND	---	1.63
200	197/200	---	---	ND	---	1.63
201		---	---	ND	---	0.814
202		---	---	ND	---	0.814
203		---	---	ND	---	0.814
204		---	---	ND	---	0.814
205		---	---	ND	---	0.814
206		---	---	ND	---	0.814
207		---	---	ND	---	0.814
208		---	---	ND	---	0.814
209		---	---	ND	---	0.814

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW008-F005
Lab Sample ID	92391738001
Filename	P180721B_08

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	1.65
Total Trichloro Biphenyls	2.93
Total Tetrachloro Biphenyls	16.8
Total Pentachloro Biphenyls	9.35
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	30.8

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW008-D005		
Lab Sample ID	92391738002		
Filename	P180721B_09		
Injected By	BAL		
Total Amount Extracted	941 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 01:53

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.587	2.67	2.0	1.02	51
13C-4-MoCB	3	12.416	3.02	2.0	1.23	62
13C-2,2'-DiCB	4	12.715	1.66	2.0	1.13	56
13C-4,4'-DiCB	15	19.867	1.64	2.0	1.42	71
13C-2,2',6-TrCB	19	16.572	1.12	2.0	1.41	70
13C-3,4,4'-TrCB	37	27.694	1.04	2.0	1.58	79
13C-2,2',6,6'-TeCB	54	20.181	0.86	2.0	1.15	57
13C-3,4,4',5-TeCB	81	34.826	0.84	2.0	1.69	85
13C-3,3',4,4'-TeCB	77	35.413	0.81	2.0	1.68	84
13C-2,2',4,6,6'-PeCB	104	26.302	1.72	2.0	1.24	62
13C-2,3,3',4,4'-PeCB	105	39.007	1.61	2.0	1.84	92
13C-2,3,4,4',5-PeCB	114	38.336	1.53	2.0	1.74	87
13C-2,3',4,4',5-PeCB	118	37.766	1.67	2.0	1.82	91
13C-2,3',4,4',5'-PeCB	123	37.431	1.58	2.0	1.80	90
13C-3,3',4,4',5-PeCB	126	42.176	1.56	2.0	1.94	97
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.25	2.0	1.24	62
13C-HxCB(156/157)	156/157	45.217	1.32	4.0	3.34	84
13C-2,3',4,4',5,5'-HxCB	167	44.026	1.31	2.0	1.71	86
13C-3,3',4,4',5,5'-HxCB	169	48.537	1.29	2.0	1.82	91
13C-2,2',3,4',5,6,6'-HpCB	188	38.235	1.03	2.0	1.36	68
13C-2,3,3',4,4',5,5'-HpCB	189	51.048	1.05	2.0	1.70	85
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.724	0.90	2.0	1.42	71
13C-2,3,3',4,4',5,5',6-OcCB	205	53.095	0.91	2.0	1.55	77
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.518	0.83	2.0	1.50	75
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.509	0.81	2.0	1.47	74
13C--DeCB	209	55.983	0.69	2.0	1.41	71
CleanupStandards						
13C-2,4,4'-TrCB	28	23.284	1.12	2.0	1.74	87
13C-2,3,3',5,5'-PeCB	111	35.379	1.60	2.0	1.80	90
13C-2,2',3,3',5,5',6-HpCB	178	41.388	1.06	2.0	1.65	82
Recovery Standards						
13C-2,5-DiCB	9	15.182	1.59	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.279	0.86	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.579	1.50	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.969	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.707	0.91	2.0	NA	NA

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-D005
Lab Sample ID 92391738002
Filename P180721B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.266
2		---	---	ND	---	0.266
3		---	---	ND	---	0.266
4		---	---	ND	---	0.266
5		---	---	ND	---	0.266
6		---	---	ND	---	0.266
7		---	---	ND	---	0.266
8		---	---	ND	---	0.266
9		---	---	ND	---	0.266
10		---	---	ND	---	0.266
11		---	---	ND	---	2.60
12	12/13	---	---	ND	---	0.531
13	12/13	---	---	ND	---	0.531
14		---	---	ND	---	0.266
15		---	---	ND	---	0.351
16		---	---	ND	---	0.266
17		---	---	ND	---	0.266
18	18/30	---	---	ND	---	0.531
19		---	---	ND	---	0.266
20	20/28	---	---	ND	---	1.37
21	21/33	---	---	ND	---	1.43
22		---	---	ND	---	1.01
23		---	---	ND	---	0.266
24		---	---	ND	---	0.266
25		---	---	ND	---	0.266
26	26/29	---	---	ND	---	0.531
27		---	---	ND	---	0.266
28	20/28	---	---	ND	---	1.37
29	26/29	---	---	ND	---	0.531
30	18/30	---	---	ND	---	0.531
31		---	---	ND	---	1.38
32		---	---	ND	---	0.266
33	21/33	---	---	ND	---	1.43
34		---	---	ND	---	0.266
35		---	---	ND	---	0.266
36		---	---	ND	---	0.266
37		---	---	ND	---	0.563
38		---	---	ND	---	0.266
39		---	---	ND	---	0.266
40	40/41/71	---	---	ND	---	1.59
41	40/41/71	---	---	ND	---	1.59
42		---	---	ND	---	0.531
43	43/73	---	---	ND	---	0.531
44	44/47/65	---	---	ND	---	1.59
45	45/51	---	---	ND	---	1.06
46		---	---	ND	---	0.531
47	44/47/65	---	---	ND	---	1.59
48		---	---	ND	---	0.531

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-D005
Lab Sample ID 92391738002
Filename P180721B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.06
50	50/53	---	---	ND	---	1.06
51	45/51	---	---	ND	---	1.06
52		---	---	ND	---	1.64
53	50/53	---	---	ND	---	1.06
54		---	---	ND	---	0.531
55		---	---	ND	---	0.531
56		---	---	ND	---	0.531
57		---	---	ND	---	0.531
58		---	---	ND	---	0.531
59	59/62/75	---	---	ND	---	1.59
60		---	---	ND	---	0.531
61	61/70/74/76	---	---	ND	---	2.13
62	59/62/75	---	---	ND	---	1.59
63		---	---	ND	---	0.531
64		---	---	ND	---	0.531
65	44/47/65	---	---	ND	---	1.59
66		---	---	ND	---	0.893
67		---	---	ND	---	0.531
68		---	---	ND	---	0.531
69	49/69	---	---	ND	---	1.06
70	61/70/74/76	---	---	ND	---	2.13
71	40/41/71	---	---	ND	---	1.59
72		---	---	ND	---	0.531
73	43/73	---	---	ND	---	0.531
74	61/70/74/76	---	---	ND	---	2.13
75	59/62/75	---	---	ND	---	1.59
76	61/70/74/76	---	---	ND	---	2.13
77		---	---	ND	---	0.531
78		---	---	ND	---	0.531
79		---	---	ND	---	0.531
80		---	---	ND	---	0.531
81		---	---	ND	---	0.531
82		---	---	ND	---	0.531
83		---	---	ND	---	0.531
84		---	---	ND	---	0.531
85	85/116/117	---	---	ND	---	1.59
86	86/87/97/108/119/125	---	---	ND	---	3.19
87	86/87/97/108/119/125	---	---	ND	---	3.19
88	88/91	---	---	ND	---	1.06
89		---	---	ND	---	0.531
90	90/101/113	---	---	ND	---	1.59
91	88/91	---	---	ND	---	1.06
92		---	---	ND	---	0.531
93	93/98/100/102	---	---	ND	---	2.13
94		---	---	ND	---	0.531
95		---	---	ND	---	1.01
96		---	---	ND	---	0.531

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-D005
Lab Sample ID 92391738002
Filename P180721B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.19
98	93/98/100/102	---	---	ND	---	2.13
99		---	---	ND	---	0.531
100	93/98/100/102	---	---	ND	---	2.13
101	90/101/113	---	---	ND	---	1.59
102	93/98/100/102	---	---	ND	---	2.13
103		---	---	ND	---	0.531
104		---	---	ND	---	0.531
105		---	---	ND	---	0.531
106		---	---	ND	---	0.531
107	107/124	---	---	ND	---	1.06
108	86/87/97/108/119/125	---	---	ND	---	3.19
109		---	---	ND	---	0.531
110	110/115	---	---	ND	---	1.06
111		---	---	ND	---	0.531
112		---	---	ND	---	0.531
113	90/101/113	---	---	ND	---	1.59
114		---	---	ND	---	0.531
115	110/115	---	---	ND	---	1.06
116	85/116/117	---	---	ND	---	1.59
117	85/116/117	---	---	ND	---	1.59
118		---	---	ND	---	0.680
119	86/87/97/108/119/125	---	---	ND	---	3.19
120		---	---	ND	---	0.531
121		---	---	ND	---	0.531
122		---	---	ND	---	0.531
123		---	---	ND	---	0.531
124	107/124	---	---	ND	---	1.06
125	86/87/97/108/119/125	---	---	ND	---	3.19
126		---	---	ND	---	0.531
127		---	---	ND	---	0.531
128	128/166	---	---	ND	---	1.06
129	129/138/163	---	---	ND	---	1.59
130		---	---	ND	---	0.531
131		---	---	ND	---	0.531
132		---	---	ND	---	0.531
133		---	---	ND	---	0.531
134	134/143	---	---	ND	---	1.06
135	135/151	---	---	ND	---	1.06
136		---	---	ND	---	0.531
137		---	---	ND	---	0.531
138	129/138/163	---	---	ND	---	1.59
139	139/140	---	---	ND	---	1.06
140	139/140	---	---	ND	---	1.06
141		---	---	ND	---	0.531
142		---	---	ND	---	0.531
143	134/143	---	---	ND	---	1.06
144		---	---	ND	---	0.531

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Sample Analysis Results

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Lab Sample ID 92391738002
Filename P180721B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.531
146		---	---	ND	---	0.531
147	147/149	---	---	ND	---	1.06
148		---	---	ND	---	0.531
149	147/149	---	---	ND	---	1.06
150		---	---	ND	---	0.531
151	135/151	---	---	ND	---	1.06
152		---	---	ND	---	0.531
153	153/168	---	---	ND	---	1.06
154		---	---	ND	---	0.531
155		---	---	ND	---	0.531
156	156/157	---	---	ND	---	1.06
157	156/157	---	---	ND	---	1.06
158		---	---	ND	---	0.531
159		---	---	ND	---	0.531
160		---	---	ND	---	0.531
161		---	---	ND	---	0.531
162		---	---	ND	---	0.531
163	129/138/163	---	---	ND	---	1.59
164		---	---	ND	---	0.531
165		---	---	ND	---	0.531
166	128/166	---	---	ND	---	1.06
167		---	---	ND	---	0.531
168	153/168	---	---	ND	---	1.06
169		---	---	ND	---	0.531
170		---	---	ND	---	0.531
171	171/173	---	---	ND	---	1.06
172		---	---	ND	---	0.531
173	171/173	---	---	ND	---	1.06
174		---	---	ND	---	0.531
175		---	---	ND	---	0.531
176		---	---	ND	---	0.531
177		---	---	ND	---	0.531
178		---	---	ND	---	0.531
179		---	---	ND	---	0.531
180	180/193	---	---	ND	---	1.06
181		---	---	ND	---	0.531
182		---	---	ND	---	0.531
183	183/185	---	---	ND	---	1.06
184		---	---	ND	---	0.531
185	183/185	---	---	ND	---	1.06
186		---	---	ND	---	0.531
187		---	---	ND	---	0.531
188		---	---	ND	---	0.531
189		---	---	ND	---	0.531
190		---	---	ND	---	0.531
191		---	---	ND	---	0.531
192		---	---	ND	---	0.531

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW008-D005
Lab Sample ID 92391738002
Filename P180721B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.06
194		---	---	ND	---	0.797
195		---	---	ND	---	0.797
196		---	---	ND	---	0.797
197	197/200	---	---	ND	---	1.59
198	198/199	---	---	ND	---	1.59
199	198/199	---	---	ND	---	1.59
200	197/200	---	---	ND	---	1.59
201		---	---	ND	---	0.797
202		---	---	ND	---	0.797
203		---	---	ND	---	0.797
204		---	---	ND	---	0.797
205		---	---	ND	---	0.797
206		---	---	ND	---	0.797
207		---	---	ND	---	0.797
208		---	---	ND	---	0.797
209		---	---	ND	---	0.797

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW008-D005
Lab Sample ID	92391738002
Filename	P180721B_09

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Minneapolis, MN 55414

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW009-F005		
Lab Sample ID	92391738003		
Filename	P180721B_10		
Injected By	BAL		
Total Amount Extracted	987 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 02:52

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.587	3.15	2.0	0.756	38
13C-4-MoCB	3	12.427	3.05	2.0	0.970	48
13C-2,2'-DiCB	4	12.714	1.57	2.0	0.908	45
13C-4,4'-DiCB	15	19.876	1.63	2.0	1.18	59
13C-2,2',6-TrCB	19	16.570	1.04	2.0	1.04	52
13C-3,4,4'-TrCB	37	27.707	0.95	2.0	1.42	71
13C-2,2',6,6'-TeCB	54	20.195	0.87	2.0	0.952	48
13C-3,4,4',5-TeCB	81	34.839	0.74	2.0	1.38	69
13C-3,3',4,4'-TeCB	77	35.425	0.85	2.0	1.29	64
13C-2,2',4,6,6'-PeCB	104	26.299	1.56	2.0	1.02	51
13C-2,3,3',4,4'-PeCB	105	39.019	1.58	2.0	1.49	75
13C-2,3,4,4',5-PeCB	114	38.348	1.57	2.0	1.49	74
13C-2,3',4,4',5-PeCB	118	37.778	1.53	2.0	1.46	73
13C-2,3',4,4',5'-PeCB	123	37.426	1.59	2.0	1.46	73
13C-3,3',4,4',5-PeCB	126	42.205	1.72	2.0	1.51	76
13C-2,2',4,4',6,6'-HxCB	155	32.324	1.31	2.0	1.02	51
13C-HxCB(156/157)	156/157	45.245	1.35	4.0	2.67	67
13C-2,3',4,4',5,5'-HxCB	167	44.055	1.15	2.0	1.35	68
13C-3,3',4,4',5,5'-HxCB	169	48.548	1.31	2.0	1.48	74
13C-2,2',3,4',5,6,6'-HpCB	188	38.248	1.06	2.0	1.22	61
13C-2,3,3',4,4',5,5'-HpCB	189	51.042	1.02	2.0	1.46	73
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.736	0.91	2.0	1.28	64
13C-2,3,3',4,4',5,5',6-OcCB	205	53.111	0.87	2.0	1.38	69
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.555	0.83	2.0	1.32	66
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.503	0.78	2.0	1.30	65
13C--DeCB	209	56.020	0.70	2.0	1.31	66
CleanupStandards						
13C-2,4,4'-TrCB	28	23.281	0.92	2.0	1.60	80
13C-2,3,3',5,5'-PeCB	111	35.392	1.68	2.0	1.55	78
13C-2,2',3,3',5,5',6-HpCB	178	41.383	1.01	2.0	1.47	73
Recovery Standards						
13C-2,5-DiCB	9	15.204	1.58	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.292	0.84	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.592	1.65	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.964	1.27	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.723	0.93	2.0	NA	NA

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW009-F005
Lab Sample ID 92391738003
Filename P180721B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.253
2		---	---	ND	---	0.253
3		---	---	ND	---	0.253
4		---	---	ND	---	0.253
5		---	---	ND	---	0.253
6		---	---	ND	---	0.253
7		---	---	ND	---	0.253
8		---	---	ND	---	0.253
9		---	---	ND	---	0.253
10		---	---	ND	---	0.253
11		---	---	ND	---	2.48
12	12/13	---	---	ND	---	0.506
13	12/13	---	---	ND	---	0.506
14		---	---	ND	---	0.253
15		---	---	ND	---	0.334
16		---	---	ND	---	0.253
17		---	---	ND	---	0.253
18	18/30	---	---	ND	---	0.506
19		---	---	ND	---	0.253
20	20/28	---	---	ND	---	1.31
21	21/33	---	---	ND	---	1.37
22		---	---	ND	---	0.962
23		---	---	ND	---	0.253
24		---	---	ND	---	0.253
25		---	---	ND	---	0.253
26	26/29	---	---	ND	---	0.506
27		---	---	ND	---	0.253
28	20/28	---	---	ND	---	1.31
29	26/29	---	---	ND	---	0.506
30	18/30	---	---	ND	---	0.506
31		---	---	ND	---	1.32
32		---	---	ND	---	0.253
33	21/33	---	---	ND	---	1.37
34		---	---	ND	---	0.253
35		---	---	ND	---	0.253
36		---	---	ND	---	0.253
37		---	---	ND	---	0.537
38		---	---	ND	---	0.253
39		---	---	ND	---	0.253
40	40/41/71	---	---	ND	---	1.52
41	40/41/71	---	---	ND	---	1.52
42		---	---	ND	---	0.506
43	43/73	---	---	ND	---	0.506
44	44/47/65	---	---	ND	---	1.52
45	45/51	---	---	ND	---	1.01
46		---	---	ND	---	0.506
47	44/47/65	---	---	ND	---	1.52
48		---	---	ND	---	0.506

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW009-F005
Lab Sample ID 92391738003
Filename P180721B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.01
50	50/53	---	---	ND	---	1.01
51	45/51	---	---	ND	---	1.01
52		---	---	ND	---	1.56
53	50/53	---	---	ND	---	1.01
54		---	---	ND	---	0.506
55		---	---	ND	---	0.506
56		---	---	ND	---	0.506
57		---	---	ND	---	0.506
58		---	---	ND	---	0.506
59	59/62/75	---	---	ND	---	1.52
60		---	---	ND	---	0.506
61	61/70/74/76	---	---	ND	---	2.03
62	59/62/75	---	---	ND	---	1.52
63		---	---	ND	---	0.506
64		---	---	ND	---	0.506
65	44/47/65	---	---	ND	---	1.52
66		---	---	ND	---	0.851
67		---	---	ND	---	0.506
68		---	---	ND	---	0.506
69	49/69	---	---	ND	---	1.01
70	61/70/74/76	---	---	ND	---	2.03
71	40/41/71	---	---	ND	---	1.52
72		---	---	ND	---	0.506
73	43/73	---	---	ND	---	0.506
74	61/70/74/76	---	---	ND	---	2.03
75	59/62/75	---	---	ND	---	1.52
76	61/70/74/76	---	---	ND	---	2.03
77		---	---	ND	---	0.506
78		---	---	ND	---	0.506
79		---	---	ND	---	0.506
80		---	---	ND	---	0.506
81		---	---	ND	---	0.506
82		---	---	ND	---	0.506
83		---	---	ND	---	0.506
84		---	---	ND	---	0.506
85	85/116/117	---	---	ND	---	1.52
86	86/87/97/108/119/125	---	---	ND	---	3.04
87	86/87/97/108/119/125	---	---	ND	---	3.04
88	88/91	---	---	ND	---	1.01
89		---	---	ND	---	0.506
90	90/101/113	---	---	ND	---	1.52
91	88/91	---	---	ND	---	1.01
92		---	---	ND	---	0.506
93	93/98/100/102	---	---	ND	---	2.03
94		---	---	ND	---	0.506
95		---	---	ND	---	0.962
96		---	---	ND	---	0.506

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW009-F005
Lab Sample ID 92391738003
Filename P180721B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.04
98	93/98/100/102	---	---	ND	---	2.03
99		---	---	ND	---	0.506
100	93/98/100/102	---	---	ND	---	2.03
101	90/101/113	---	---	ND	---	1.52
102	93/98/100/102	---	---	ND	---	2.03
103		---	---	ND	---	0.506
104		---	---	ND	---	0.506
105		---	---	ND	---	0.506
106		---	---	ND	---	0.506
107	107/124	---	---	ND	---	1.01
108	86/87/97/108/119/125	---	---	ND	---	3.04
109		---	---	ND	---	0.506
110	110/115	---	---	ND	---	1.01
111		---	---	ND	---	0.506
112		---	---	ND	---	0.506
113	90/101/113	---	---	ND	---	1.52
114		---	---	ND	---	0.506
115	110/115	---	---	ND	---	1.01
116	85/116/117	---	---	ND	---	1.52
117	85/116/117	---	---	ND	---	1.52
118		---	---	ND	---	0.648
119	86/87/97/108/119/125	---	---	ND	---	3.04
120		---	---	ND	---	0.506
121		---	---	ND	---	0.506
122		---	---	ND	---	0.506
123		---	---	ND	---	0.506
124	107/124	---	---	ND	---	1.01
125	86/87/97/108/119/125	---	---	ND	---	3.04
126		---	---	ND	---	0.506
127		---	---	ND	---	0.506
128	128/166	---	---	ND	---	1.01
129	129/138/163	---	---	ND	---	1.52
130		---	---	ND	---	0.506
131		---	---	ND	---	0.506
132		---	---	ND	---	0.506
133		---	---	ND	---	0.506
134	134/143	---	---	ND	---	1.01
135	135/151	---	---	ND	---	1.01
136		---	---	ND	---	0.506
137		---	---	ND	---	0.506
138	129/138/163	---	---	ND	---	1.52
139	139/140	---	---	ND	---	1.01
140	139/140	---	---	ND	---	1.01
141		---	---	ND	---	0.506
142		---	---	ND	---	0.506
143	134/143	---	---	ND	---	1.01
144		---	---	ND	---	0.506

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW009-F005
Lab Sample ID 92391738003
Filename P180721B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.506
146		---	---	ND	---	0.506
147	147/149	---	---	ND	---	1.01
148		---	---	ND	---	0.506
149	147/149	---	---	ND	---	1.01
150		---	---	ND	---	0.506
151	135/151	---	---	ND	---	1.01
152		---	---	ND	---	0.506
153	153/168	---	---	ND	---	1.01
154		---	---	ND	---	0.506
155		---	---	ND	---	0.506
156	156/157	---	---	ND	---	1.01
157	156/157	---	---	ND	---	1.01
158		---	---	ND	---	0.506
159		---	---	ND	---	0.506
160		---	---	ND	---	0.506
161		---	---	ND	---	0.506
162		---	---	ND	---	0.506
163	129/138/163	---	---	ND	---	1.52
164		---	---	ND	---	0.506
165		---	---	ND	---	0.506
166	128/166	---	---	ND	---	1.01
167		---	---	ND	---	0.506
168	153/168	---	---	ND	---	1.01
169		---	---	ND	---	0.506
170		---	---	ND	---	0.506
171	171/173	---	---	ND	---	1.01
172		---	---	ND	---	0.506
173	171/173	---	---	ND	---	1.01
174		---	---	ND	---	0.506
175		---	---	ND	---	0.506
176		---	---	ND	---	0.506
177		---	---	ND	---	0.506
178		---	---	ND	---	0.506
179		---	---	ND	---	0.506
180	180/193	---	---	ND	---	1.01
181		---	---	ND	---	0.506
182		---	---	ND	---	0.506
183	183/185	---	---	ND	---	1.01
184		---	---	ND	---	0.506
185	183/185	---	---	ND	---	1.01
186		---	---	ND	---	0.506
187		---	---	ND	---	0.506
188		---	---	ND	---	0.506
189		---	---	ND	---	0.506
190		---	---	ND	---	0.506
191		---	---	ND	---	0.506
192		---	---	ND	---	0.506

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Sample Analysis Results

Client Sample ID ABL-SW009-F005
Lab Sample ID 92391738003
Filename P180721B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.01
194		---	---	ND	---	0.760
195		---	---	ND	---	0.760
196		---	---	ND	---	0.760
197	197/200	---	---	ND	---	1.52
198	198/199	---	---	ND	---	1.52
199	198/199	---	---	ND	---	1.52
200	197/200	---	---	ND	---	1.52
201		---	---	ND	---	0.760
202		---	---	ND	---	0.760
203		---	---	ND	---	0.760
204		---	---	ND	---	0.760
205		---	---	ND	---	0.760
206		---	---	ND	---	0.760
207		---	---	ND	---	0.760
208		---	---	ND	---	0.760
209		---	---	ND	---	0.760

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW009-F005
Lab Sample ID	92391738003
Filename	P180721B_10

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW010-F005		
Lab Sample ID	92391738004		
Filename	P180721B_11		
Injected By	BAL		
Total Amount Extracted	966 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 03:52

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.576	2.74	2.0	0.886	44
13C-4-MoCB	3	12.428	2.75	2.0	1.03	52
13C-2,2'-DiCB	4	12.727	1.67	2.0	0.983	49
13C-4,4'-DiCB	15	19.880	1.57	2.0	1.31	66
13C-2,2',6-TrCB	19	16.560	1.08	2.0	1.26	63
13C-3,4,4'-TrCB	37	27.694	1.16	2.0	1.57	79
13C-2,2',6,6'-TeCB	54	20.199	0.83	2.0	1.06	53
13C-3,4,4',5-TeCB	81	34.825	0.84	2.0	1.60	80
13C-3,3',4,4'-TeCB	77	35.429	0.81	2.0	1.62	81
13C-2,2',4,6,6'-PeCB	104	26.302	1.50	2.0	1.15	57
13C-2,3,3',4,4'-PeCB	105	38.989	1.50	2.0	1.69	85
13C-2,3,4,4',5-PeCB	114	38.318	1.50	2.0	1.68	84
13C-2,3',4,4',5-PeCB	118	37.765	1.58	2.0	1.72	86
13C-2,3',4,4',5'-PeCB	123	37.430	1.63	2.0	1.65	83
13C-3,3',4,4',5-PeCB	126	42.175	1.62	2.0	1.80	90
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.23	2.0	1.18	59
13C-HxCB(156/157)	156/157	45.249	1.38	4.0	3.18	79
13C-2,3',4,4',5,5'-HxCB	167	44.025	1.30	2.0	1.58	79
13C-3,3',4,4',5,5'-HxCB	169	48.551	1.24	2.0	1.64	82
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	0.96	2.0	1.39	69
13C-2,3,3',4,4',5,5'-HpCB	189	51.023	1.06	2.0	1.67	84
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.739	0.90	2.0	1.36	68
13C-2,3,3',4,4',5,5',6-OcCB	205	53.114	0.91	2.0	1.58	79
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.515	0.89	2.0	1.42	71
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.506	0.85	2.0	1.41	71
13C--DeCB	209	55.980	0.70	2.0	1.48	74
CleanupStandards						
13C-2,4,4'-TrCB	28	23.284	1.03	2.0	1.73	86
13C-2,3,3',5,5'-PeCB	111	35.379	1.58	2.0	1.66	83
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.06	2.0	1.62	81
Recovery Standards						
13C-2,5-DiCB	9	15.182	1.59	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.263	0.79	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.578	1.49	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.951	1.24	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.726	0.88	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW010-F005
Lab Sample ID 92391738004
Filename P180721B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.259
2		---	---	ND	---	0.259
3		---	---	ND	---	0.259
4		---	---	ND	---	0.259
5		---	---	ND	---	0.259
6		---	---	ND	---	0.259
7		---	---	ND	---	0.259
8		---	---	ND	---	0.259
9		---	---	ND	---	0.259
10		---	---	ND	---	0.259
11		---	---	ND	---	2.54
12	12/13	---	---	ND	---	0.518
13	12/13	---	---	ND	---	0.518
14		---	---	ND	---	0.259
15		---	---	ND	---	0.342
16		---	---	ND	---	0.259
17		---	---	ND	---	0.259
18	18/30	---	---	ND	---	0.518
19		---	---	ND	---	0.259
20	20/28	---	---	ND	---	1.34
21	21/33	---	---	ND	---	1.40
22		---	---	ND	---	0.983
23		---	---	ND	---	0.259
24		---	---	ND	---	0.259
25		---	---	ND	---	0.259
26	26/29	---	---	ND	---	0.518
27		---	---	ND	---	0.259
28	20/28	---	---	ND	---	1.34
29	26/29	---	---	ND	---	0.518
30	18/30	---	---	ND	---	0.518
31		---	---	ND	---	1.35
32		---	---	ND	---	0.259
33	21/33	---	---	ND	---	1.40
34		---	---	ND	---	0.259
35		---	---	ND	---	0.259
36		---	---	ND	---	0.259
37		---	---	ND	---	0.549
38		---	---	ND	---	0.259
39		---	---	ND	---	0.259
40	40/41/71	---	---	ND	---	1.55
41	40/41/71	---	---	ND	---	1.55
42		---	---	ND	---	0.518
43	43/73	---	---	ND	---	0.518
44	44/47/65	---	---	ND	---	1.55
45	45/51	---	---	ND	---	1.04
46		---	---	ND	---	0.518
47	44/47/65	---	---	ND	---	1.55
48		---	---	ND	---	0.518

Conc = Concentration
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW010-F005
Lab Sample ID 92391738004
Filename P180721B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.04
50	50/53	---	---	ND	---	1.04
51	45/51	---	---	ND	---	1.04
52		---	---	ND	---	1.59
53	50/53	---	---	ND	---	1.04
54		---	---	ND	---	0.518
55		---	---	ND	---	0.518
56		---	---	ND	---	0.518
57		---	---	ND	---	0.518
58		---	---	ND	---	0.518
59	59/62/75	---	---	ND	---	1.55
60		---	---	ND	---	0.518
61	61/70/74/76	---	---	ND	---	2.07
62	59/62/75	---	---	ND	---	1.55
63		---	---	ND	---	0.518
64		---	---	ND	---	0.518
65	44/47/65	---	---	ND	---	1.55
66		---	---	ND	---	0.869
67		---	---	ND	---	0.518
68		---	---	ND	---	0.518
69	49/69	---	---	ND	---	1.04
70	61/70/74/76	---	---	ND	---	2.07
71	40/41/71	---	---	ND	---	1.55
72		---	---	ND	---	0.518
73	43/73	---	---	ND	---	0.518
74	61/70/74/76	---	---	ND	---	2.07
75	59/62/75	---	---	ND	---	1.55
76	61/70/74/76	---	---	ND	---	2.07
77		---	---	ND	---	0.518
78		---	---	ND	---	0.518
79		---	---	ND	---	0.518
80		---	---	ND	---	0.518
81		---	---	ND	---	0.518
82		---	---	ND	---	0.518
83		---	---	ND	---	0.518
84		---	---	ND	---	0.518
85	85/116/117	---	---	ND	---	1.55
86	86/87/97/108/119/125	---	---	ND	---	3.11
87	86/87/97/108/119/125	---	---	ND	---	3.11
88	88/91	---	---	ND	---	1.04
89		---	---	ND	---	0.518
90	90/101/113	---	---	ND	---	1.55
91	88/91	---	---	ND	---	1.04
92		---	---	ND	---	0.518
93	93/98/100/102	---	---	ND	---	2.07
94		---	---	ND	---	0.518
95		---	---	ND	---	0.983
96		---	---	ND	---	0.518

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW010-F005
Lab Sample ID 92391738004
Filename P180721B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.11
98	93/98/100/102	---	---	ND	---	2.07
99		---	---	ND	---	0.518
100	93/98/100/102	---	---	ND	---	2.07
101	90/101/113	---	---	ND	---	1.55
102	93/98/100/102	---	---	ND	---	2.07
103		---	---	ND	---	0.518
104		---	---	ND	---	0.518
105		---	---	ND	---	0.518
106		---	---	ND	---	0.518
107	107/124	---	---	ND	---	1.04
108	86/87/97/108/119/125	---	---	ND	---	3.11
109		---	---	ND	---	0.518
110	110/115	---	---	ND	---	1.04
111		---	---	ND	---	0.518
112		---	---	ND	---	0.518
113	90/101/113	---	---	ND	---	1.55
114		---	---	ND	---	0.518
115	110/115	---	---	ND	---	1.04
116	85/116/117	---	---	ND	---	1.55
117	85/116/117	---	---	ND	---	1.55
118		---	---	ND	---	0.662
119	86/87/97/108/119/125	---	---	ND	---	3.11
120		---	---	ND	---	0.518
121		---	---	ND	---	0.518
122		---	---	ND	---	0.518
123		---	---	ND	---	0.518
124	107/124	---	---	ND	---	1.04
125	86/87/97/108/119/125	---	---	ND	---	3.11
126		---	---	ND	---	0.518
127		---	---	ND	---	0.518
128	128/166	---	---	ND	---	1.04
129	129/138/163	---	---	ND	---	1.55
130		---	---	ND	---	0.518
131		---	---	ND	---	0.518
132		---	---	ND	---	0.518
133		---	---	ND	---	0.518
134	134/143	---	---	ND	---	1.04
135	135/151	---	---	ND	---	1.04
136		---	---	ND	---	0.518
137		---	---	ND	---	0.518
138	129/138/163	---	---	ND	---	1.55
139	139/140	---	---	ND	---	1.04
140	139/140	---	---	ND	---	1.04
141		---	---	ND	---	0.518
142		---	---	ND	---	0.518
143	134/143	---	---	ND	---	1.04
144		---	---	ND	---	0.518

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW010-F005
Lab Sample ID 92391738004
Filename P180721B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.518
146		---	---	ND	---	0.518
147	147/149	---	---	ND	---	1.04
148		---	---	ND	---	0.518
149	147/149	---	---	ND	---	1.04
150		---	---	ND	---	0.518
151	135/151	---	---	ND	---	1.04
152		---	---	ND	---	0.518
153	153/168	---	---	ND	---	1.04
154		---	---	ND	---	0.518
155		---	---	ND	---	0.518
156	156/157	---	---	ND	---	1.04
157	156/157	---	---	ND	---	1.04
158		---	---	ND	---	0.518
159		---	---	ND	---	0.518
160		---	---	ND	---	0.518
161		---	---	ND	---	0.518
162		---	---	ND	---	0.518
163	129/138/163	---	---	ND	---	1.55
164		---	---	ND	---	0.518
165		---	---	ND	---	0.518
166	128/166	---	---	ND	---	1.04
167		---	---	ND	---	0.518
168	153/168	---	---	ND	---	1.04
169		---	---	ND	---	0.518
170		---	---	ND	---	0.518
171	171/173	---	---	ND	---	1.04
172		---	---	ND	---	0.518
173	171/173	---	---	ND	---	1.04
174		---	---	ND	---	0.518
175		---	---	ND	---	0.518
176		---	---	ND	---	0.518
177		---	---	ND	---	0.518
178		---	---	ND	---	0.518
179		---	---	ND	---	0.518
180	180/193	---	---	ND	---	1.04
181		---	---	ND	---	0.518
182		---	---	ND	---	0.518
183	183/185	---	---	ND	---	1.04
184		---	---	ND	---	0.518
185	183/185	---	---	ND	---	1.04
186		---	---	ND	---	0.518
187		---	---	ND	---	0.518
188		---	---	ND	---	0.518
189		---	---	ND	---	0.518
190		---	---	ND	---	0.518
191		---	---	ND	---	0.518
192		---	---	ND	---	0.518

Conc = Concentration
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Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW010-F005
Lab Sample ID 92391738004
Filename P180721B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.04
194		---	---	ND	---	0.776
195		---	---	ND	---	0.776
196		---	---	ND	---	0.776
197	197/200	---	---	ND	---	1.55
198	198/199	---	---	ND	---	1.55
199	198/199	---	---	ND	---	1.55
200	197/200	---	---	ND	---	1.55
201		---	---	ND	---	0.776
202		---	---	ND	---	0.776
203		---	---	ND	---	0.776
204		---	---	ND	---	0.776
205		---	---	ND	---	0.776
206		---	---	ND	---	0.776
207		---	---	ND	---	0.776
208		---	---	ND	---	0.776
209		---	---	ND	---	0.776

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW010-F005
Lab Sample ID	92391738004
Filename	P180721B_11

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW011-F005		
Lab Sample ID	92391738005		
Filename	P180721B_12		
Injected By	BAL		
Total Amount Extracted	890 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 04:52

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	3.33	2.0	0.796	40
13C-4-MoCB	3	12.427	3.11	2.0	0.967	48
13C-2,2'-DiCB	4	12.727	1.51	2.0	0.887	44
13C-4,4'-DiCB	15	19.878	1.64	2.0	1.27	63
13C-2,2',6-TrCB	19	16.583	1.09	2.0	1.16	58
13C-3,4,4'-TrCB	37	27.693	1.09	2.0	1.58	79
13C-2,2',6,6'-TeCB	54	20.197	0.84	2.0	0.996	50
13C-3,4,4',5-TeCB	81	34.826	0.78	2.0	1.68	84
13C-3,3',4,4'-TeCB	77	35.412	0.80	2.0	1.73	86
13C-2,2',4,6,6'-PeCB	104	26.301	1.54	2.0	1.08	54
13C-2,3,3',4,4'-PeCB	105	39.006	1.67	2.0	1.68	84
13C-2,3,4,4',5-PeCB	114	38.319	1.67	2.0	1.64	82
13C-2,3',4,4',5-PeCB	118	37.782	1.59	2.0	1.67	83
13C-2,3',4,4',5'-PeCB	123	37.430	1.57	2.0	1.61	81
13C-3,3',4,4',5-PeCB	126	42.193	1.52	2.0	1.79	90
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.26	2.0	1.16	58
13C-HxCB(156/157)	156/157	45.216	1.26	4.0	3.11	78
13C-2,3',4,4',5,5'-HxCB	167	44.043	1.25	2.0	1.57	79
13C-3,3',4,4',5,5'-HxCB	169	48.554	1.23	2.0	1.68	84
13C-2,2',3,4',5,6,6'-HpCB	188	38.252	1.08	2.0	1.28	64
13C-2,3,3',4,4',5,5'-HpCB	189	51.026	1.08	2.0	1.59	79
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.741	0.89	2.0	1.35	68
13C-2,3,3',4,4',5,5',6-OcCB	205	53.095	0.89	2.0	1.54	77
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.540	0.83	2.0	1.48	74
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.487	0.75	2.0	1.36	68
13C--DeCB	209	55.984	0.76	2.0	1.44	72
CleanupStandards						
13C-2,4,4'-TrCB	28	23.283	1.11	2.0	1.57	79
13C-2,3,3',5,5'-PeCB	111	35.379	1.64	2.0	1.49	74
13C-2,2',3,3',5,5',6-HpCB	178	41.371	0.99	2.0	1.47	73
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.57	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.295	0.76	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.595	1.46	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.951	1.22	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.729	0.87	2.0	NA	NA

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Nn = Value obtained from additional analyses

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW011-F005
Lab Sample ID 92391738005
Filename P180721B_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.281
2		---	---	ND	---	0.281
3		---	---	ND	---	0.281
4		---	---	ND	---	0.281
5		---	---	ND	---	0.281
6		---	---	ND	---	0.281
7		---	---	ND	---	0.281
8		---	---	ND	---	0.281
9		---	---	ND	---	0.281
10		---	---	ND	---	0.281
11		---	---	ND	---	2.75
12	12/13	---	---	ND	---	0.562
13	12/13	---	---	ND	---	0.562
14		---	---	ND	---	0.281
15		---	---	ND	---	0.371
16		---	---	ND	---	0.281
17		---	---	ND	---	0.281
18	18/30	---	---	ND	---	0.562
19		---	---	ND	---	0.281
20	20/28	---	---	ND	---	1.45
21	21/33	---	---	ND	---	1.52
22		---	---	ND	---	1.07
23		---	---	ND	---	0.281
24		---	---	ND	---	0.281
25		---	---	ND	---	0.281
26	26/29	---	---	ND	---	0.562
27		---	---	ND	---	0.281
28	20/28	---	---	ND	---	1.45
29	26/29	---	---	ND	---	0.562
30	18/30	---	---	ND	---	0.562
31		---	---	ND	---	1.46
32		---	---	ND	---	0.281
33	21/33	---	---	ND	---	1.52
34		---	---	ND	---	0.281
35		---	---	ND	---	0.281
36		---	---	ND	---	0.281
37		---	---	ND	---	0.595
38		---	---	ND	---	0.281
39		---	---	ND	---	0.281
40	40/41/71	---	---	ND	---	1.69
41	40/41/71	---	---	ND	---	1.69
42		---	---	ND	---	0.562
43	43/73	---	---	ND	---	0.562
44	44/47/65	---	---	ND	---	1.69
45	45/51	---	---	ND	---	1.12
46		---	---	ND	---	0.562
47	44/47/65	---	---	ND	---	1.69
48		---	---	ND	---	0.562

Conc = Concentration
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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW011-F005
Lab Sample ID 92391738005
Filename P180721B_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.12
50	50/53	---	---	ND	---	1.12
51	45/51	---	---	ND	---	1.12
52		---	---	ND	---	1.73
53	50/53	---	---	ND	---	1.12
54		---	---	ND	---	0.562
55		---	---	ND	---	0.562
56		---	---	ND	---	0.562
57		---	---	ND	---	0.562
58		---	---	ND	---	0.562
59	59/62/75	---	---	ND	---	1.69
60		---	---	ND	---	0.562
61	61/70/74/76	---	---	ND	---	2.25
62	59/62/75	---	---	ND	---	1.69
63		---	---	ND	---	0.562
64		---	---	ND	---	0.562
65	44/47/65	---	---	ND	---	1.69
66		---	---	ND	---	0.944
67		---	---	ND	---	0.562
68		---	---	ND	---	0.562
69	49/69	---	---	ND	---	1.12
70	61/70/74/76	---	---	ND	---	2.25
71	40/41/71	---	---	ND	---	1.69
72		---	---	ND	---	0.562
73	43/73	---	---	ND	---	0.562
74	61/70/74/76	---	---	ND	---	2.25
75	59/62/75	---	---	ND	---	1.69
76	61/70/74/76	---	---	ND	---	2.25
77		---	---	ND	---	0.562
78		---	---	ND	---	0.562
79		---	---	ND	---	0.562
80		---	---	ND	---	0.562
81		---	---	ND	---	0.562
82		---	---	ND	---	0.562
83		---	---	ND	---	0.562
84		---	---	ND	---	0.562
85	85/116/117	---	---	ND	---	1.69
86	86/87/97/108/119/125	---	---	ND	---	3.37
87	86/87/97/108/119/125	---	---	ND	---	3.37
88	88/91	---	---	ND	---	1.12
89		---	---	ND	---	0.562
90	90/101/113	---	---	ND	---	1.69
91	88/91	---	---	ND	---	1.12
92		---	---	ND	---	0.562
93	93/98/100/102	---	---	ND	---	2.25
94		---	---	ND	---	0.562
95		---	---	ND	---	1.07
96		---	---	ND	---	0.562

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW011-F005
Lab Sample ID 92391738005
Filename P180721B_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.37
98	93/98/100/102	---	---	ND	---	2.25
99		---	---	ND	---	0.562
100	93/98/100/102	---	---	ND	---	2.25
101	90/101/113	---	---	ND	---	1.69
102	93/98/100/102	---	---	ND	---	2.25
103		---	---	ND	---	0.562
104		---	---	ND	---	0.562
105		---	---	ND	---	0.562
106		---	---	ND	---	0.562
107	107/124	---	---	ND	---	1.12
108	86/87/97/108/119/125	---	---	ND	---	3.37
109		---	---	ND	---	0.562
110	110/115	---	---	ND	---	1.12
111		---	---	ND	---	0.562
112		---	---	ND	---	0.562
113	90/101/113	---	---	ND	---	1.69
114		---	---	ND	---	0.562
115	110/115	---	---	ND	---	1.12
116	85/116/117	---	---	ND	---	1.69
117	85/116/117	---	---	ND	---	1.69
118		---	---	ND	---	0.719
119	86/87/97/108/119/125	---	---	ND	---	3.37
120		---	---	ND	---	0.562
121		---	---	ND	---	0.562
122		---	---	ND	---	0.562
123		---	---	ND	---	0.562
124	107/124	---	---	ND	---	1.12
125	86/87/97/108/119/125	---	---	ND	---	3.37
126		---	---	ND	---	0.562
127		---	---	ND	---	0.562
128	128/166	---	---	ND	---	1.12
129	129/138/163	---	---	ND	---	1.69
130		---	---	ND	---	0.562
131		---	---	ND	---	0.562
132		---	---	ND	---	0.562
133		---	---	ND	---	0.562
134	134/143	---	---	ND	---	1.12
135	135/151	---	---	ND	---	1.12
136		---	---	ND	---	0.562
137		---	---	ND	---	0.562
138	129/138/163	---	---	ND	---	1.69
139	139/140	---	---	ND	---	1.12
140	139/140	---	---	ND	---	1.12
141		---	---	ND	---	0.562
142		---	---	ND	---	0.562
143	134/143	---	---	ND	---	1.12
144		---	---	ND	---	0.562

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW011-F005
Lab Sample ID 92391738005
Filename P180721B_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.562
146		---	---	ND	---	0.562
147	147/149	---	---	ND	---	1.12
148		---	---	ND	---	0.562
149	147/149	---	---	ND	---	1.12
150		---	---	ND	---	0.562
151	135/151	---	---	ND	---	1.12
152		---	---	ND	---	0.562
153	153/168	---	---	ND	---	1.12
154		---	---	ND	---	0.562
155		---	---	ND	---	0.562
156	156/157	---	---	ND	---	1.12
157	156/157	---	---	ND	---	1.12
158		---	---	ND	---	0.562
159		---	---	ND	---	0.562
160		---	---	ND	---	0.562
161		---	---	ND	---	0.562
162		---	---	ND	---	0.562
163	129/138/163	---	---	ND	---	1.69
164		---	---	ND	---	0.562
165		---	---	ND	---	0.562
166	128/166	---	---	ND	---	1.12
167		---	---	ND	---	0.562
168	153/168	---	---	ND	---	1.12
169		---	---	ND	---	0.562
170		---	---	ND	---	0.562
171	171/173	---	---	ND	---	1.12
172		---	---	ND	---	0.562
173	171/173	---	---	ND	---	1.12
174		---	---	ND	---	0.562
175		---	---	ND	---	0.562
176		---	---	ND	---	0.562
177		---	---	ND	---	0.562
178		---	---	ND	---	0.562
179		---	---	ND	---	0.562
180	180/193	---	---	ND	---	1.12
181		---	---	ND	---	0.562
182		---	---	ND	---	0.562
183	183/185	---	---	ND	---	1.12
184		---	---	ND	---	0.562
185	183/185	---	---	ND	---	1.12
186		---	---	ND	---	0.562
187		---	---	ND	---	0.562
188		---	---	ND	---	0.562
189		---	---	ND	---	0.562
190		---	---	ND	---	0.562
191		---	---	ND	---	0.562
192		---	---	ND	---	0.562

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW011-F005
Lab Sample ID 92391738005
Filename P180721B_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.12
194		---	---	ND	---	0.843
195		---	---	ND	---	0.843
196		---	---	ND	---	0.843
197	197/200	---	---	ND	---	1.69
198	198/199	---	---	ND	---	1.69
199	198/199	---	---	ND	---	1.69
200	197/200	---	---	ND	---	1.69
201		---	---	ND	---	0.843
202		---	---	ND	---	0.843
203		---	---	ND	---	0.843
204		---	---	ND	---	0.843
205		---	---	ND	---	0.843
206		---	---	ND	---	0.843
207		---	---	ND	---	0.843
208		---	---	ND	---	0.843
209		---	---	ND	---	0.843

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW011-F005
Lab Sample ID	92391738005
Filename	P180721B_12

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW012-F005		
Lab Sample ID	92391738006		
Filename	P180721B_13		
Injected By	BAL		
Total Amount Extracted	972 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018
ICAL ID	P180721B02	Received	07/14/2018 09:30
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/22/2018 05:52

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.576	3.02	2.0	0.743	37
13C-4-MoCB	3	12.428	2.88	2.0	0.937	47
13C-2,2'-DiCB	4	12.727	1.52	2.0	0.857	43
13C-4,4'-DiCB	15	19.879	1.52	2.0	1.19	60
13C-2,2',6-TrCB	19	16.548	1.02	2.0	1.47	73
13C-3,4,4'-TrCB	37	27.678	1.00	2.0	1.35	67
13C-2,2',6,6'-TeCB	54	20.198	0.84	2.0	1.03	51
13C-3,4,4',5-TeCB	81	34.810	0.86	2.0	1.60	80
13C-3,3',4,4'-TeCB	77	35.414	0.80	2.0	1.53	77
13C-2,2',4,6,6'-PeCB	104	26.286	1.62	2.0	1.07	54
13C-2,3,3',4,4'-PeCB	105	38.991	1.53	2.0	1.56	78
13C-2,3,4,4',5-PeCB	114	38.320	1.48	2.0	1.55	78
13C-2,3',4,4',5-PeCB	118	37.767	1.51	2.0	1.53	77
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13C-2,2',4,4',6,6'-HxCB	155	32.328	1.23	2.0	1.10	55
13C-HxCB(156/157)	156/157	45.218	1.34	4.0	2.93	73
13C-2,3',4,4',5,5'-HxCB	167	44.028	1.23	2.0	1.45	73
13C-3,3',4,4',5,5'-HxCB	169	48.538	1.27	2.0	1.56	78
13C-2,2',3,4',5,6,6'-HpCB	188	38.220	1.05	2.0	1.23	62
13C-2,3,3',4,4',5,5'-HpCB	189	51.028	1.08	2.0	1.52	76
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.725	0.84	2.0	1.30	65
13C-2,3,3',4,4',5,5',6-OcCB	205	53.097	0.85	2.0	1.46	73
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.520	0.79	2.0	1.41	71
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.489	0.82	2.0	1.32	66
13C--DeCB	209	55.985	0.70	2.0	1.36	68
CleanupStandards						
13C-2,4,4'-TrCB	28	23.267	1.07	2.0	1.56	78
13C-2,3,3',5,5'-PeCB	111	35.381	1.66	2.0	1.57	79
13C-2,2',3,3',5,5',6-HpCB	178	41.372	1.05	2.0	1.50	75
Recovery Standards						
13C-2,5-DiCB	9	15.182	1.56	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.280	0.81	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.580	1.49	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.953	1.30	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.730	0.92	2.0	NA	NA

Conc = Concentration
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW012-F005
Lab Sample ID 92391738006
Filename P180721B_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.257
2		---	---	ND	---	0.257
3		---	---	ND	---	0.257
4		---	---	ND	---	0.257
5		---	---	ND	---	0.257
6		---	---	ND	---	0.257
7		---	---	ND	---	0.257
8		---	---	ND	---	0.257
9		---	---	ND	---	0.257
10		---	---	ND	---	0.257
11		---	---	ND	---	2.52
12	12/13	---	---	ND	---	0.515
13	12/13	---	---	ND	---	0.515
14		---	---	ND	---	0.257
15		---	---	ND	---	0.340
16		---	---	ND	---	0.257
17		---	---	ND	---	0.257
18	18/30	---	---	ND	---	0.515
19		---	---	ND	---	0.257
20	20/28	---	---	ND	---	1.33
21	21/33	---	---	ND	---	1.39
22		---	---	ND	---	0.978
23		---	---	ND	---	0.257
24		---	---	ND	---	0.257
25		---	---	ND	---	0.257
26	26/29	---	---	ND	---	0.515
27		---	---	ND	---	0.257
28	20/28	---	---	ND	---	1.33
29	26/29	---	---	ND	---	0.515
30	18/30	---	---	ND	---	0.515
31		---	---	ND	---	1.34
32		---	---	ND	---	0.257
33	21/33	---	---	ND	---	1.39
34		---	---	ND	---	0.257
35		---	---	ND	---	0.257
36		---	---	ND	---	0.257
37		---	---	ND	---	0.545
38		---	---	ND	---	0.257
39		---	---	ND	---	0.257
40	40/41/71	---	---	ND	---	1.54
41	40/41/71	---	---	ND	---	1.54
42		---	---	ND	---	0.515
43	43/73	---	---	ND	---	0.515
44	44/47/65	---	---	ND	---	1.54
45	45/51	---	---	ND	---	1.03
46		---	---	ND	---	0.515
47	44/47/65	---	---	ND	---	1.54
48		---	---	ND	---	0.515

Conc = Concentration
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Nn = Value obtained from additional analyses

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW012-F005
Lab Sample ID 92391738006
Filename P180721B_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.03
50	50/53	---	---	ND	---	1.03
51	45/51	---	---	ND	---	1.03
52		---	---	ND	---	1.58
53	50/53	---	---	ND	---	1.03
54		---	---	ND	---	0.515
55		---	---	ND	---	0.515
56		---	---	ND	---	0.515
57		---	---	ND	---	0.515
58		---	---	ND	---	0.515
59	59/62/75	---	---	ND	---	1.54
60		---	---	ND	---	0.515
61	61/70/74/76	---	---	ND	---	2.06
62	59/62/75	---	---	ND	---	1.54
63		---	---	ND	---	0.515
64		---	---	ND	---	0.515
65	44/47/65	---	---	ND	---	1.54
66		---	---	ND	---	0.864
67		---	---	ND	---	0.515
68		---	---	ND	---	0.515
69	49/69	---	---	ND	---	1.03
70	61/70/74/76	---	---	ND	---	2.06
71	40/41/71	---	---	ND	---	1.54
72		---	---	ND	---	0.515
73	43/73	---	---	ND	---	0.515
74	61/70/74/76	---	---	ND	---	2.06
75	59/62/75	---	---	ND	---	1.54
76	61/70/74/76	---	---	ND	---	2.06
77		---	---	ND	---	0.515
78		---	---	ND	---	0.515
79		---	---	ND	---	0.515
80		---	---	ND	---	0.515
81		---	---	ND	---	0.515
82		---	---	ND	---	0.515
83		---	---	ND	---	0.515
84		---	---	ND	---	0.515
85	85/116/117	---	---	ND	---	1.54
86	86/87/97/108/119/125	---	---	ND	---	3.09
87	86/87/97/108/119/125	---	---	ND	---	3.09
88	88/91	---	---	ND	---	1.03
89		---	---	ND	---	0.515
90	90/101/113	---	---	ND	---	1.54
91	88/91	---	---	ND	---	1.03
92		---	---	ND	---	0.515
93	93/98/100/102	---	---	ND	---	2.06
94		---	---	ND	---	0.515
95		---	---	ND	---	0.978
96		---	---	ND	---	0.515

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW012-F005
Lab Sample ID 92391738006
Filename P180721B_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.09
98	93/98/100/102	---	---	ND	---	2.06
99		---	---	ND	---	0.515
100	93/98/100/102	---	---	ND	---	2.06
101	90/101/113	---	---	ND	---	1.54
102	93/98/100/102	---	---	ND	---	2.06
103		---	---	ND	---	0.515
104		---	---	ND	---	0.515
105		---	---	ND	---	0.515
106		---	---	ND	---	0.515
107	107/124	---	---	ND	---	1.03
108	86/87/97/108/119/125	---	---	ND	---	3.09
109		---	---	ND	---	0.515
110	110/115	---	---	ND	---	1.03
111		---	---	ND	---	0.515
112		---	---	ND	---	0.515
113	90/101/113	---	---	ND	---	1.54
114		---	---	ND	---	0.515
115	110/115	---	---	ND	---	1.03
116	85/116/117	---	---	ND	---	1.54
117	85/116/117	---	---	ND	---	1.54
118		---	---	ND	---	0.659
119	86/87/97/108/119/125	---	---	ND	---	3.09
120		---	---	ND	---	0.515
121		---	---	ND	---	0.515
122		---	---	ND	---	0.515
123		---	---	ND	---	0.515
124	107/124	---	---	ND	---	1.03
125	86/87/97/108/119/125	---	---	ND	---	3.09
126		---	---	ND	---	0.515
127		---	---	ND	---	0.515
128	128/166	---	---	ND	---	1.03
129	129/138/163	---	---	ND	---	1.54
130		---	---	ND	---	0.515
131		---	---	ND	---	0.515
132		---	---	ND	---	0.515
133		---	---	ND	---	0.515
134	134/143	---	---	ND	---	1.03
135	135/151	---	---	ND	---	1.03
136		---	---	ND	---	0.515
137		---	---	ND	---	0.515
138	129/138/163	---	---	ND	---	1.54
139	139/140	---	---	ND	---	1.03
140	139/140	---	---	ND	---	1.03
141		---	---	ND	---	0.515
142		---	---	ND	---	0.515
143	134/143	---	---	ND	---	1.03
144		---	---	ND	---	0.515

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW012-F005
Lab Sample ID 92391738006
Filename P180721B_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.515
146		---	---	ND	---	0.515
147	147/149	---	---	ND	---	1.03
148		---	---	ND	---	0.515
149	147/149	---	---	ND	---	1.03
150		---	---	ND	---	0.515
151	135/151	---	---	ND	---	1.03
152		---	---	ND	---	0.515
153	153/168	---	---	ND	---	1.03
154		---	---	ND	---	0.515
155		---	---	ND	---	0.515
156	156/157	---	---	ND	---	1.03
157	156/157	---	---	ND	---	1.03
158		---	---	ND	---	0.515
159		---	---	ND	---	0.515
160		---	---	ND	---	0.515
161		---	---	ND	---	0.515
162		---	---	ND	---	0.515
163	129/138/163	---	---	ND	---	1.54
164		---	---	ND	---	0.515
165		---	---	ND	---	0.515
166	128/166	---	---	ND	---	1.03
167		---	---	ND	---	0.515
168	153/168	---	---	ND	---	1.03
169		---	---	ND	---	0.515
170		---	---	ND	---	0.515
171	171/173	---	---	ND	---	1.03
172		---	---	ND	---	0.515
173	171/173	---	---	ND	---	1.03
174		---	---	ND	---	0.515
175		---	---	ND	---	0.515
176		---	---	ND	---	0.515
177		---	---	ND	---	0.515
178		---	---	ND	---	0.515
179		---	---	ND	---	0.515
180	180/193	---	---	ND	---	1.03
181		---	---	ND	---	0.515
182		---	---	ND	---	0.515
183	183/185	---	---	ND	---	1.03
184		---	---	ND	---	0.515
185	183/185	---	---	ND	---	1.03
186		---	---	ND	---	0.515
187		---	---	ND	---	0.515
188		---	---	ND	---	0.515
189		---	---	ND	---	0.515
190		---	---	ND	---	0.515
191		---	---	ND	---	0.515
192		---	---	ND	---	0.515

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW012-F005
Lab Sample ID 92391738006
Filename P180721B_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.03
194		---	---	ND	---	0.772
195		---	---	ND	---	0.772
196		---	---	ND	---	0.772
197	197/200	---	---	ND	---	1.54
198	198/199	---	---	ND	---	1.54
199	198/199	---	---	ND	---	1.54
200	197/200	---	---	ND	---	1.54
201		---	---	ND	---	0.772
202		---	---	ND	---	0.772
203		---	---	ND	---	0.772
204		---	---	ND	---	0.772
205		---	---	ND	---	0.772
206		---	---	ND	---	0.772
207		---	---	ND	---	0.772
208		---	---	ND	---	0.772
209		---	---	ND	---	0.772

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW012-F005
Lab Sample ID	92391738006
Filename	P180721B_13

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-63512		
Filename	P180721B_06		
Injected By	BAL	Matrix	Water (QC Matrix)
Total Amount Extracted	1040 mL	Extracted	07/17/2018 13:15
ICAL ID	P180721B02	Analyzed	07/21/2018 22:54
CCal Filename(s)	P180721B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.94	2.0	1.30	65
13C-4-MoCB	3	12.439	2.84	2.0	1.42	71
13C-2,2'-DiCB	4	12.738	1.54	2.0	1.28	64
13C-4,4'-DiCB	15	19.890	1.52	2.0	1.48	74
13C-2,2',6-TrCB	19	16.559	0.96	2.0	1.91	96
13C-3,4,4'-TrCB	37	27.710	1.17	2.0	1.92	96
13C-2,2',6,6'-TeCB	54	20.197	0.89	2.0	1.45	73
13C-3,4,4',5-TeCB	81	34.825	0.84	2.0	1.81	90
13C-3,3',4,4'-TeCB	77	35.429	0.85	2.0	1.79	90
13C-2,2',4,6,6'-PeCB	104	26.318	1.52	2.0	1.28	64
13C-2,3,3',4,4'-PeCB	105	39.006	1.60	2.0	1.88	94
13C-2,3,4,4',5-PeCB	114	38.335	1.64	2.0	1.78	89
13C-2,3',4,4',5-PeCB	118	37.782	1.51	2.0	1.85	92
13C-2,3',4,4',5'-PeCB	123	37.446	1.49	2.0	1.85	93
13C-3,3',4,4',5-PeCB	126	42.192	1.59	2.0	1.97	99
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.27	2.0	1.27	64
13C-HxCB (156/157)	156/157	45.250	1.31	4.0	3.34	84
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.28	2.0	1.68	84
13C-3,3',4,4',5,5'-HxCB	169	48.536	1.29	2.0	1.86	93
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	1.02	2.0	1.47	74
13C-2,3,3',4,4',5,5'-HpCB	189	51.047	1.07	2.0	1.80	90
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.95	2.0	1.55	77
13C-2,3,3',4,4',5,5',6-OcCB	205	53.116	0.89	2.0	1.74	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.539	0.76	2.0	1.60	80
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.508	0.84	2.0	1.56	78
13C--DeCB	209	55.983	0.63	2.0	1.62	81
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.283	1.15	2.0	2.23	111
13C-2,3,3',5,5'-PeCB	111	35.396	1.61	2.0	1.82	91
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.05	2.0	1.75	87
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.295	0.75	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.595	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.728	0.94	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.241
2		---	---	ND	---	0.241
3		---	---	ND	---	0.241
4		---	---	ND	---	0.241
5		---	---	ND	---	0.241
6		---	---	ND	---	0.241
7		---	---	ND	---	0.241
8		---	---	ND	---	0.241
9		---	---	ND	---	0.241
10		---	---	ND	---	0.241
11		---	---	ND	---	2.37
12	12/13	---	---	ND	---	0.483
13	12/13	---	---	ND	---	0.483
14		---	---	ND	---	0.241
15		---	---	ND	---	0.241
16		---	---	ND	---	0.241
17		---	---	ND	---	0.241
18	18/30	---	---	ND	---	0.483
19		---	---	ND	---	0.241
20	20/28	---	---	ND	---	1.25
21	21/33	---	---	ND	---	1.30
22		---	---	ND	---	0.918
23		---	---	ND	---	0.241
24		---	---	ND	---	0.241
25		---	---	ND	---	0.241
26	26/29	---	---	ND	---	0.483
27		---	---	ND	---	0.241
28	20/28	---	---	ND	---	1.25
29	26/29	---	---	ND	---	0.483
30	18/30	---	---	ND	---	0.483
31		---	---	ND	---	1.26
32		---	---	ND	---	0.241
33	21/33	---	---	ND	---	1.30
34		---	---	ND	---	0.241
35		---	---	ND	---	0.241
36		---	---	ND	---	0.241
37		---	---	ND	---	0.512
38		---	---	ND	---	0.241
39		---	---	ND	---	0.241
40	40/41/71	---	---	ND	---	1.45
41	40/41/71	---	---	ND	---	1.45
42		---	---	ND	---	0.483
43	43/73	---	---	ND	---	0.483
44	44/47/65	---	---	ND	---	1.45
45	45/51	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
46		---	---	ND	---	0.483
47	44/47/65	---	---	ND	---	1.45
48		---	---	ND	---	0.483
49	49/69	---	---	ND	---	0.966
50	50/53	---	---	ND	---	0.966
51	45/51	---	---	ND	---	0.966
52		---	---	ND	---	1.49
53	50/53	---	---	ND	---	0.966
54		---	---	ND	---	0.483
55		---	---	ND	---	0.483
56		---	---	ND	---	0.483
57		---	---	ND	---	0.483
58		---	---	ND	---	0.483
59	59/62/75	---	---	ND	---	1.45
60		---	---	ND	---	0.483
61	61/70/74/76	---	---	ND	---	1.93
62	59/62/75	---	---	ND	---	1.45
63		---	---	ND	---	0.483
64		---	---	ND	---	0.483
65	44/47/65	---	---	ND	---	1.45
66		---	---	ND	---	0.811
67		---	---	ND	---	0.483
68		---	---	ND	---	0.483
69	49/69	---	---	ND	---	0.966
70	61/70/74/76	---	---	ND	---	1.93
71	40/41/71	---	---	ND	---	1.45
72		---	---	ND	---	0.483
73	43/73	---	---	ND	---	0.483
74	61/70/74/76	---	---	ND	---	1.93
75	59/62/75	---	---	ND	---	1.45
76	61/70/74/76	---	---	ND	---	1.93
77		---	---	ND	---	0.483
78		---	---	ND	---	0.483
79		---	---	ND	---	0.483
80		---	---	ND	---	0.483
81		---	---	ND	---	0.483
82		---	---	ND	---	0.483
83		---	---	ND	---	0.483
84		---	---	ND	---	0.483
85	85/116/117	---	---	ND	---	1.45
86	86/87/97/108/119/125	---	---	ND	---	2.90
87	86/87/97/108/119/125	---	---	ND	---	2.90
88	88/91	---	---	ND	---	0.966
89		---	---	ND	---	0.483
90	90/101/113	---	---	ND	---	1.45

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
91	88/91	---	---	ND	---	0.966
92		---	---	ND	---	0.483
93	93/98/100/102	---	---	ND	---	1.93
94		---	---	ND	---	0.483
95		---	---	ND	---	0.918
96		---	---	ND	---	0.483
97	86/87/97/108/119/125	---	---	ND	---	2.90
98	93/98/100/102	---	---	ND	---	1.93
99		---	---	ND	---	0.483
100	93/98/100/102	---	---	ND	---	1.93
101	90/101/113	---	---	ND	---	1.45
102	93/98/100/102	---	---	ND	---	1.93
103		---	---	ND	---	0.483
104		---	---	ND	---	0.483
105		---	---	ND	---	0.483
106		---	---	ND	---	0.483
107	107/124	---	---	ND	---	0.966
108	86/87/97/108/119/125	---	---	ND	---	2.90
109		---	---	ND	---	0.483
110	110/115	---	---	ND	---	0.966
111		---	---	ND	---	0.483
112		---	---	ND	---	0.483
113	90/101/113	---	---	ND	---	1.45
114		---	---	ND	---	0.483
115	110/115	---	---	ND	---	0.966
116	85/116/117	---	---	ND	---	1.45
117	85/116/117	---	---	ND	---	1.45
118		---	---	ND	---	0.618
119	86/87/97/108/119/125	---	---	ND	---	2.90
120		---	---	ND	---	0.483
121		---	---	ND	---	0.483
122		---	---	ND	---	0.483
123		---	---	ND	---	0.483
124	107/124	---	---	ND	---	0.966
125	86/87/97/108/119/125	---	---	ND	---	2.90
126		---	---	ND	---	0.483
127		---	---	ND	---	0.483
128	128/166	---	---	ND	---	0.966
129	129/138/163	---	---	ND	---	1.45
130		---	---	ND	---	0.483
131		---	---	ND	---	0.483
132		---	---	ND	---	0.483
133		---	---	ND	---	0.483
134	134/143	---	---	ND	---	0.966
135	135/151	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
136		---	---	ND	---	0.483
137		---	---	ND	---	0.483
138	129/138/163	---	---	ND	---	1.45
139	139/140	---	---	ND	---	0.966
140	139/140	---	---	ND	---	0.966
141		---	---	ND	---	0.483
142		---	---	ND	---	0.483
143	134/143	---	---	ND	---	0.966
144		---	---	ND	---	0.483
145		---	---	ND	---	0.483
146		---	---	ND	---	0.483
147	147/149	---	---	ND	---	0.966
148		---	---	ND	---	0.483
149	147/149	---	---	ND	---	0.966
150		---	---	ND	---	0.483
151	135/151	---	---	ND	---	0.966
152		---	---	ND	---	0.483
153	153/168	---	---	ND	---	0.966
154		---	---	ND	---	0.483
155		---	---	ND	---	0.483
156	156/157	---	---	ND	---	0.966
157	156/157	---	---	ND	---	0.966
158		---	---	ND	---	0.483
159		---	---	ND	---	0.483
160		---	---	ND	---	0.483
161		---	---	ND	---	0.483
162		---	---	ND	---	0.483
163	129/138/163	---	---	ND	---	1.45
164		---	---	ND	---	0.483
165		---	---	ND	---	0.483
166	128/166	---	---	ND	---	0.966
167		---	---	ND	---	0.483
168	153/168	---	---	ND	---	0.966
169		---	---	ND	---	0.483
170		---	---	ND	---	0.483
171	171/173	---	---	ND	---	0.966
172		---	---	ND	---	0.483
173	171/173	---	---	ND	---	0.966
174		---	---	ND	---	0.483
175		---	---	ND	---	0.483
176		---	---	ND	---	0.483
177		---	---	ND	---	0.483
178		---	---	ND	---	0.483
179		---	---	ND	---	0.483
180	180/193	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
181		---	---	ND	---	0.483
182		---	---	ND	---	0.483
183	183/185	---	---	ND	---	0.966
184		---	---	ND	---	0.483
185	183/185	---	---	ND	---	0.966
186		---	---	ND	---	0.483
187		---	---	ND	---	0.483
188		---	---	ND	---	0.483
189		---	---	ND	---	0.483
190		---	---	ND	---	0.483
191		---	---	ND	---	0.483
192		---	---	ND	---	0.483
193	180/193	---	---	ND	---	0.966
194		---	---	ND	---	0.724
195		---	---	ND	---	0.724
196		---	---	ND	---	0.724
197	197/200	---	---	ND	---	1.45
198	198/199	---	---	ND	---	1.45
199	198/199	---	---	ND	---	1.45
200	197/200	---	---	ND	---	1.45
201		---	---	ND	---	0.724
202		---	---	ND	---	0.724
203		---	---	ND	---	0.724
204		---	---	ND	---	0.724
205		---	---	ND	---	0.724
206		---	---	ND	---	0.724
207		---	---	ND	---	0.724
208		---	---	ND	---	0.724
209		---	---	ND	---	0.724

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
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Minneapolis, MN 55414

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKSY
Lab Sample ID	BLANK-63512
Filename	P180721B_06

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-63513		
Filename	P180721B_03	Matrix	Water (QC Matrix)
Total Amount Extracted	945 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 19:55
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	0.996	100	2.0	0.992	50
3	1.0	0.978	98	2.0	1.06	53
4	1.0	1.07	107	2.0	0.945	47
15	1.0	1.03	103	2.0	1.12	56
19	1.0	0.953	95	2.0	1.07	53
37	1.0	0.813	81	2.0	1.35	68
54	1.0	0.932	93	2.0	0.963	48
81	1.0	0.870	87	2.0	1.45	73
77	1.0	0.928	93	2.0	1.35	67
104	1.0	0.985	98	2.0	0.926	46
105	1.0	0.923	92	2.0	1.37	69
114	1.0	1.01	101	2.0	1.32	66
118	1.0	0.968	97	2.0	1.36	68
123	1.0	0.959	96	2.0	1.33	67
126	1.0	0.977	98	2.0	1.43	72
155	1.0	0.921	92	2.0	0.950	48
156/157	2.0	1.86	93	4.0	2.54	63
167	1.0	0.954	95	2.0	1.24	62
169	1.0	0.944	94	2.0	1.43	71
188	1.0	1.00	100	2.0	0.960	48
189	1.0	1.01	101	2.0	1.30	65
202	1.0	0.991	99	2.0	1.00	50
205	1.0	1.03	103	2.0	1.20	60
206	1.0	1.03	103	2.0	1.13	56
208	1.0	0.993	99	2.0	1.06	53
209	1.0	1.05	105	2.0	1.08	54

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Minneapolis, MN 55414

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-63514		
Filename	P180721B_04	Matrix	Water (QC Matrix)
Total Amount Extracted	959 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 20:54
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.04	104	2.0	1.11	55	
3	1.0	1.04	104	2.0	1.12	56	
4	1.0	1.13	113	2.0	0.983	49	
15	1.0	1.09	109	2.0	1.15	57	
19	1.0	0.903	90	2.0	1.23	61	
37	1.0	0.939	94	2.0	1.11	63	I
54	1.0	0.903	90	2.0	1.04	52	
81	1.0	0.914	91	2.0	1.44	72	
77	1.0	0.968	97	2.0	1.33	67	
104	1.0	0.991	99	2.0	1.00	50	
105	1.0	1.01	101	2.0	1.41	71	
114	1.0	1.02	102	2.0	1.42	71	
118	1.0	0.938	94	2.0	1.45	73	
123	1.0	0.953	95	2.0	1.45	72	
126	1.0	0.969	97	2.0	1.56	78	
155	1.0	1.04	104	2.0	0.987	49	
156/157	2.0	2.03	102	4.0	2.67	67	
167	1.0	0.986	99	2.0	1.36	68	
169	1.0	0.931	93	2.0	1.49	74	
188	1.0	1.01	101	2.0	1.13	56	
189	1.0	0.995	100	2.0	1.51	75	
202	1.0	0.961	96	2.0	1.19	60	
205	1.0	1.02	102	2.0	1.33	67	
206	1.0	1.07	107	2.0	1.26	63	
208	1.0	0.921	92	2.0	1.27	63	
209	1.0	0.944	94	2.0	1.20	60	

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63513	Spike 2 ID	LCSD-63514
Spike 1 Filename	P180721B_03	Spike 2 Filename	P180721B_04

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	100	104	3.9
4-MoCB	3	98	104	5.9
2,2'-DiCB	4	107	113	5.5
4,4'-DiCB	15	103	109	5.7
2,2',6-TrCB	19	95	90	5.4
3,4,4'-TrCB	37	81	94	14.9
2,2',6,6'-TeCB	54	93	90	3.3
3,3',4,4'-TeCB	77	93	97	4.2
3,4,4',5-TeCB	81	87	91	4.5
2,2',4,6,6'-PeCB	104	98	99	1.0
2,3,3',4,4'-PeCB	105	92	101	9.3
2,3,4,4',5-PeCB	114	101	102	1.0
2,3',4,4',5-PeCB	118	97	94	3.1
2,3',4,4',5'-PeCB	123	96	95	1.0
3,3',4,4',5-PeCB	126	98	97	1.0
2,2',4,4',6,6'-HxCB	155	92	104	12.2
(156/157)	156/157	93	102	9.2
2,3',4,4',5,5'-HxCB	167	95	99	4.1
3,3',4,4',5,5'-HxCB	169	94	93	1.1
2,2',3,4',5,6,6'-HpCB	188	100	101	1.0
2,3,3',4,4',5,5'-HpCB	189	101	100	1.0
2,2',3,3',5,5',6,6'-OcCB	202	99	96	3.1
2,3,3',4,4',5,5',6-OcCB	205	103	102	1.0
2,2',3,3',4,4',5,5',6-NoCB	206	103	107	3.8
2,2',3,3',4,5,5',6,6'-NoCB	208	99	92	7.3
Decachlorobiphenyl	209	105	94	11.1

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

August 10, 2018

Michael W. Worden
Environeering, Inc.
16100 Cairnway
Suite 320
Houston, TX 77084

RE: Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Dear Michael Worden:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This revision was issued on 8/10/18 to include 2,2'-oxybix(1-chloropropane) in the semi-volatile fraction.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92391708001	**ABL-SW008-F005**	Water	07/12/18 07:10	07/12/18 12:30
92391708002	**ABL-SW008-D005**	Water	07/12/18 07:30	07/12/18 12:30
92391708003	**ABL-SW012-F005**	Water	07/12/18 09:55	07/12/18 12:30
92391708004	**ABL-TB001-F005**	Water	07/12/18 00:00	07/12/18 12:30

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SAMPLE ANALYTE COUNT

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92391708001	**ABL-SW008-F005**	EPA 608.3	NU1	27	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	12	PASI-A
		EPA 245.1 Rev 3.0 1994	JMW1	1	PASI-A
		EPA 625.1	PKS	61	PASI-C
		EPA 624	GAW	37	PASI-C
		EPA 420.4 Rev 1.0 1993	DMN	1	PASI-A
		SM 4500-CN-E-2011	CJH1	1	PASI-A
92391708002	**ABL-SW008-D005**	EPA 608.3	NU1	27	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	12	PASI-A
		EPA 245.1 Rev 3.0 1994	JMW1	1	PASI-A
		EPA 625.1	PKS	61	PASI-C
		EPA 624	GAW	37	PASI-C
		EPA 420.4 Rev 1.0 1993	DMN	1	PASI-A
		SM 4500-CN-E-2011	CJH1	1	PASI-A
92391708003	**ABL-SW012-F005**	EPA 608.3	NU1	27	PASI-C
		EPA 200.7 Rev 4.4 1994	SH1	12	PASI-A
		EPA 245.1 Rev 3.0 1994	JMW1	1	PASI-A
		EPA 625.1	PKS	61	PASI-C
		EPA 624	GAW	37	PASI-C
		EPA 420.4 Rev 1.0 1993	DMN	1	PASI-A
		SM 4500-CN-E-2011	BRJ	1	PASI-A
92391708004	**ABL-TB001-F005**	EPA 624	GAW	37	PASI-C

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-F005 **Lab ID: 92391708001** Collected: 07/12/18 07:10 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
608 PCB Pest RVE	Analytical Method: EPA 608.3 Preparation Method: EPA 608.3								
Aldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:16	1024-57-3	
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	11096-82-5	
Toxaphene	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:16	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	45	%	60-140		1	07/18/18 23:58	07/19/18 17:16	877-09-8	S2
Decachlorobiphenyl (S)	53	%	60-140		1	07/18/18 23:58	07/19/18 17:16	2051-24-3	S2
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Antimony	ND	ug/L	5.0	3.9	1	07/13/18 05:20	07/14/18 03:34	7440-36-0	
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:34	7440-38-2	
Beryllium	ND	ug/L	1.0	0.050	1	07/13/18 05:20	07/14/18 03:34	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	07/13/18 05:20	07/14/18 03:34	7440-43-9	
Chromium	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7440-47-3	
Copper	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7440-50-8	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7439-92-1	
Nickel	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:34	7782-49-2	
Silver	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7440-22-4	
Thallium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:34	7440-28-0	
Zinc	ND	ug/L	10.0	2.5	1	07/13/18 05:20	07/14/18 03:34	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Rev 3.0 1994 Preparation Method: EPA 245.1 Rev 3.0 1994								
Mercury	ND	ug/L	0.20	0.070	1	07/13/18 14:50	07/16/18 09:38	7439-97-6	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-F005 **Lab ID: 92391708001** Collected: 07/12/18 07:10 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
Acenaphthene	ND	ug/L	5.0	0.25	1	07/12/18 20:27	07/19/18 10:32	83-32-9	
Acenaphthylene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 10:32	208-96-8	
Anthracene	ND	ug/L	5.0	0.14	1	07/12/18 20:27	07/19/18 10:32	120-12-7	
Benzidine	ND	ug/L	50.0	5.1	1	07/12/18 20:27	07/19/18 10:32	92-87-5	L2
Benzo(a)anthracene	**5.3**	ug/L	5.0	0.33	1	07/12/18 20:27	07/19/18 10:32	56-55-3	
Benzo(a)pyrene	**1.3J**	ug/L	5.0	0.30	1	07/12/18 20:27	07/19/18 10:32	50-32-8	
Benzo(b)fluoranthene	**1.5J**	ug/L	5.0	0.28	1	07/12/18 20:27	07/19/18 10:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	0.38	1	07/12/18 20:27	07/19/18 10:32	191-24-2	
Benzo(k)fluoranthene	**1.7J**	ug/L	5.0	0.43	1	07/12/18 20:27	07/19/18 10:32	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	0.82	1	07/12/18 20:27	07/19/18 10:32	101-55-3	
Butylbenzylphthalate	**6.1**	ug/L	5.0	0.79	1	07/12/18 20:27	07/19/18 10:32	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	3.7	1	07/12/18 20:27	07/19/18 10:32	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	0.92	1	07/12/18 20:27	07/19/18 10:32	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1.0	1	07/12/18 20:27	07/19/18 10:32	111-44-4	
2-Chloronaphthalene	ND	ug/L	5.0	0.98	1	07/12/18 20:27	07/19/18 10:32	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1.3	1	07/12/18 20:27	07/19/18 10:32	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	5.0	0.87	1	07/12/18 20:27	07/19/18 10:32	7005-72-3	
Chrysene	**5.7**	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 10:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	0.55	1	07/12/18 20:27	07/19/18 10:32	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	2.1	1	07/12/18 20:27	07/19/18 10:32	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1.7	1	07/12/18 20:27	07/19/18 10:32	120-83-2	
Diethylphthalate	ND	ug/L	5.0	0.58	1	07/12/18 20:27	07/19/18 10:32	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1.2	1	07/12/18 20:27	07/19/18 10:32	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	0.76	1	07/12/18 20:27	07/19/18 10:32	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	0.75	1	07/12/18 20:27	07/19/18 10:32	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	2.6	1	07/12/18 20:27	07/19/18 10:32	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	9.0	1	07/12/18 20:27	07/19/18 10:32	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	0.90	1	07/12/18 20:27	07/19/18 10:32	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	0.98	1	07/12/18 20:27	07/19/18 10:32	606-20-2	
Di-n-octylphthalate	**1.9J**	ug/L	5.0	0.66	1	07/12/18 20:27	07/19/18 10:32	117-84-0	
1,2-Diphenylhydrazine	ND	ug/L	5.0	0.90	1	07/12/18 20:27	07/19/18 10:32	122-66-7	
bis(2-Ethylhexyl)phthalate	**4.8J**	ug/L	5.0	0.79	1	07/12/18 20:27	07/19/18 10:32	117-81-7	
Fluoranthene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 10:32	206-44-0	
Fluorene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 10:32	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	0.94	1	07/12/18 20:27	07/19/18 10:32	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	0.72	1	07/12/18 20:27	07/19/18 10:32	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	0.88	1	07/12/18 20:27	07/19/18 10:32	77-47-4	
Hexachloroethane	ND	ug/L	5.0	1.1	1	07/12/18 20:27	07/19/18 10:32	67-72-1	L2
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	0.29	1	07/12/18 20:27	07/19/18 10:32	193-39-5	
Isophorone	ND	ug/L	10.0	0.89	1	07/12/18 20:27	07/19/18 10:32	78-59-1	
2-Methylnaphthalene	ND	ug/L	5.0	0.28	1	07/12/18 20:27	07/19/18 10:32	91-57-6	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	2.0	1	07/12/18 20:27	07/19/18 10:32	15831-10-4	N2
Naphthalene	ND	ug/L	5.0	0.34	1	07/12/18 20:27	07/19/18 10:32	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1.1	1	07/12/18 20:27	07/19/18 10:32	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	0.91	1	07/12/18 20:27	07/19/18 10:32	88-75-5	
4-Nitrophenol	**9.8J**	ug/L	50.0	4.1	1	07/12/18 20:27	07/19/18 10:32	100-02-7	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-F005 **Lab ID: 92391708001** Collected: 07/12/18 07:10 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
N-Nitrosodimethylamine	ND	ug/L	5.0	0.91	1	07/12/18 20:27	07/19/18 10:32	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	0.99	1	07/12/18 20:27	07/19/18 10:32	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.0	1	07/12/18 20:27	07/19/18 10:32	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	5.0	0.95	1	07/12/18 20:27	07/19/18 10:32	108-60-1	
Pentachlorophenol	ND	ug/L	10.0	4.6	1	07/12/18 20:27	07/19/18 10:32	87-86-5	
Phenanthrene	ND	ug/L	5.0	0.22	1	07/12/18 20:27	07/19/18 10:32	85-01-8	
Phenol	ND	ug/L	5.0	1.9	1	07/12/18 20:27	07/19/18 10:32	108-95-2	
Pyrene	**1.2J**	ug/L	5.0	0.19	1	07/12/18 20:27	07/19/18 10:32	129-00-0	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.3	1	07/12/18 20:27	07/19/18 10:32	88-06-2	L2
Surrogates									
Nitrobenzene-d5 (S)	73	%	10-120		1	07/12/18 20:27	07/19/18 10:32	4165-60-0	
2-Fluorobiphenyl (S)	68	%	15-120		1	07/12/18 20:27	07/19/18 10:32	321-60-8	
Terphenyl-d14 (S)	73	%	11-131		1	07/12/18 20:27	07/19/18 10:32	1718-51-0	
Phenol-d6 (S)	23	%	10-120		1	07/12/18 20:27	07/19/18 10:32	13127-88-3	
2-Fluorophenol (S)	35	%	10-120		1	07/12/18 20:27	07/19/18 10:32	367-12-4	
2,4,6-Tribromophenol (S)	92	%	10-137		1	07/12/18 20:27	07/19/18 10:32	118-79-6	
624 Volatile Organics	Analytical Method: EPA 624								
Acrolein	ND	ug/L	5.0	1.0	1		07/13/18 23:50	107-02-8	
Acrylonitrile	ND	ug/L	50.0	11.5	1		07/13/18 23:50	107-13-1	
Benzene	ND	ug/L	2.0	1.7	1		07/13/18 23:50	71-43-2	
Bromodichloromethane	ND	ug/L	2.0	1.7	1		07/13/18 23:50	75-27-4	
Bromoform	ND	ug/L	2.0	1.5	1		07/13/18 23:50	75-25-2	
Bromomethane	ND	ug/L	2.0	1.0	1		07/13/18 23:50	74-83-9	
Carbon tetrachloride	ND	ug/L	2.0	1.9	1		07/13/18 23:50	56-23-5	
Chlorobenzene	ND	ug/L	2.0	1.7	1		07/13/18 23:50	108-90-7	
Chloroethane	ND	ug/L	2.0	1.6	1		07/13/18 23:50	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	5.0	2.2	1		07/13/18 23:50	110-75-8	c2
Chloroform	ND	ug/L	2.0	1.9	1		07/13/18 23:50	67-66-3	
Chloromethane	ND	ug/L	2.0	1.5	1		07/13/18 23:50	74-87-3	
Dibromochloromethane	ND	ug/L	2.0	1.8	1		07/13/18 23:50	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 23:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 23:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 23:50	106-46-7	
1,1-Dichloroethane	ND	ug/L	2.0	1.8	1		07/13/18 23:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	1.8	1		07/13/18 23:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.0	1.9	1		07/13/18 23:50	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1.8	1		07/13/18 23:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	1.7	1		07/13/18 23:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/13/18 23:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/13/18 23:50	10061-02-6	
Ethylbenzene	ND	ug/L	2.0	1.6	1		07/13/18 23:50	100-41-4	
Methylene Chloride	ND	ug/L	2.0	1.9	1		07/13/18 23:50	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1.5	1		07/13/18 23:50	79-34-5	
Tetrachloroethene	ND	ug/L	2.0	1.8	1		07/13/18 23:50	127-18-4	
Toluene	ND	ug/L	2.0	1.6	1		07/13/18 23:50	108-88-3	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-F005 **Lab ID: 92391708001** Collected: 07/12/18 07:10 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624								
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1.7	1		07/13/18 23:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	1.9	1		07/13/18 23:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	1.7	1		07/13/18 23:50	79-00-5	
Trichloroethene	ND	ug/L	2.0	1.8	1		07/13/18 23:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	1.7	1		07/13/18 23:50	75-69-4	
Vinyl chloride	ND	ug/L	2.0	1.5	1		07/13/18 23:50	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		07/13/18 23:50	460-00-4	
Toluene-d8 (S)	110	%	70-130		1		07/13/18 23:50	2037-26-5	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		07/13/18 23:50	17060-07-0	
420.4 Phenolics, Total	Analytical Method: EPA 420.4 Rev 1.0 1993								
Phenol	**0.0090J**	mg/L	0.010	0.0050	1		07/19/18 12:51	108-95-2	B,B0
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E-2011								
Cyanide	ND	mg/L	0.0080	0.0040	1		07/17/18 15:17	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-D005 **Lab ID: 92391708002** Collected: 07/12/18 07:30 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
608 PCB Pest RVE	Analytical Method: EPA 608.3 Preparation Method: EPA 608.3								
Aldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:29	1024-57-3	
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	11096-82-5	
Toxaphene	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:29	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	39	%	60-140		1	07/18/18 23:58	07/19/18 17:29	877-09-8	S2
Decachlorobiphenyl (S)	38	%	60-140		1	07/18/18 23:58	07/19/18 17:29	2051-24-3	S2
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Antimony	ND	ug/L	5.0	3.9	1	07/13/18 05:20	07/14/18 03:37	7440-36-0	
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:37	7440-38-2	
Beryllium	ND	ug/L	1.0	0.050	1	07/13/18 05:20	07/14/18 03:37	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	07/13/18 05:20	07/14/18 03:37	7440-43-9	
Chromium	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7440-47-3	
Copper	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7440-50-8	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7439-92-1	
Nickel	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:37	7782-49-2	
Silver	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7440-22-4	
Thallium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:37	7440-28-0	
Zinc	ND	ug/L	10.0	2.5	1	07/13/18 05:20	07/14/18 03:37	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Rev 3.0 1994 Preparation Method: EPA 245.1 Rev 3.0 1994								
Mercury	ND	ug/L	0.20	0.070	1	07/13/18 14:50	07/16/18 09:45	7439-97-6	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-D005 **Lab ID: 92391708002** Collected: 07/12/18 07:30 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
Acenaphthene	ND	ug/L	5.0	0.25	1	07/12/18 20:27	07/19/18 11:02	83-32-9	
Acenaphthylene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 11:02	208-96-8	
Anthracene	ND	ug/L	5.0	0.14	1	07/12/18 20:27	07/19/18 11:02	120-12-7	
Benzidine	ND	ug/L	50.0	5.1	1	07/12/18 20:27	07/19/18 11:02	92-87-5	L2
Benzo(a)anthracene	**2.7J**	ug/L	5.0	0.33	1	07/12/18 20:27	07/19/18 11:02	56-55-3	
Benzo(a)pyrene	**1.1J**	ug/L	5.0	0.30	1	07/12/18 20:27	07/19/18 11:02	50-32-8	
Benzo(b)fluoranthene	**1.1J**	ug/L	5.0	0.28	1	07/12/18 20:27	07/19/18 11:02	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	0.38	1	07/12/18 20:27	07/19/18 11:02	191-24-2	
Benzo(k)fluoranthene	**1.1J**	ug/L	5.0	0.43	1	07/12/18 20:27	07/19/18 11:02	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	0.82	1	07/12/18 20:27	07/19/18 11:02	101-55-3	
Butylbenzylphthalate	**2.2J**	ug/L	5.0	0.79	1	07/12/18 20:27	07/19/18 11:02	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	3.7	1	07/12/18 20:27	07/19/18 11:02	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	0.92	1	07/12/18 20:27	07/19/18 11:02	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1.0	1	07/12/18 20:27	07/19/18 11:02	111-44-4	
2-Chloronaphthalene	ND	ug/L	5.0	0.98	1	07/12/18 20:27	07/19/18 11:02	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1.3	1	07/12/18 20:27	07/19/18 11:02	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	5.0	0.87	1	07/12/18 20:27	07/19/18 11:02	7005-72-3	
Chrysene	**3.0J**	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 11:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	0.55	1	07/12/18 20:27	07/19/18 11:02	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	2.1	1	07/12/18 20:27	07/19/18 11:02	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1.7	1	07/12/18 20:27	07/19/18 11:02	120-83-2	
Diethylphthalate	ND	ug/L	5.0	0.58	1	07/12/18 20:27	07/19/18 11:02	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1.2	1	07/12/18 20:27	07/19/18 11:02	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	0.76	1	07/12/18 20:27	07/19/18 11:02	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	0.75	1	07/12/18 20:27	07/19/18 11:02	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	2.6	1	07/12/18 20:27	07/19/18 11:02	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	9.0	1	07/12/18 20:27	07/19/18 11:02	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	0.90	1	07/12/18 20:27	07/19/18 11:02	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	0.98	1	07/12/18 20:27	07/19/18 11:02	606-20-2	
Di-n-octylphthalate	**1.2J**	ug/L	5.0	0.66	1	07/12/18 20:27	07/19/18 11:02	117-84-0	
1,2-Diphenylhydrazine	ND	ug/L	5.0	0.90	1	07/12/18 20:27	07/19/18 11:02	122-66-7	
bis(2-Ethylhexyl)phthalate	**2.6J**	ug/L	5.0	0.79	1	07/12/18 20:27	07/19/18 11:02	117-81-7	
Fluoranthene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 11:02	206-44-0	
Fluorene	ND	ug/L	5.0	0.21	1	07/12/18 20:27	07/19/18 11:02	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	0.94	1	07/12/18 20:27	07/19/18 11:02	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	0.72	1	07/12/18 20:27	07/19/18 11:02	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	0.88	1	07/12/18 20:27	07/19/18 11:02	77-47-4	
Hexachloroethane	ND	ug/L	5.0	1.1	1	07/12/18 20:27	07/19/18 11:02	67-72-1	L2
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	0.29	1	07/12/18 20:27	07/19/18 11:02	193-39-5	
Isophorone	ND	ug/L	10.0	0.89	1	07/12/18 20:27	07/19/18 11:02	78-59-1	
2-Methylnaphthalene	ND	ug/L	5.0	0.28	1	07/12/18 20:27	07/19/18 11:02	91-57-6	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	2.0	1	07/12/18 20:27	07/19/18 11:02	15831-10-4	N2
Naphthalene	ND	ug/L	5.0	0.34	1	07/12/18 20:27	07/19/18 11:02	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1.1	1	07/12/18 20:27	07/19/18 11:02	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	0.91	1	07/12/18 20:27	07/19/18 11:02	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	4.1	1	07/12/18 20:27	07/19/18 11:02	100-02-7	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-D005 **Lab ID: 92391708002** Collected: 07/12/18 07:30 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
N-Nitrosodimethylamine	ND	ug/L	5.0	0.91	1	07/12/18 20:27	07/19/18 11:02	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	0.99	1	07/12/18 20:27	07/19/18 11:02	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.0	1	07/12/18 20:27	07/19/18 11:02	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	5.0	0.95	1	07/12/18 20:27	07/19/18 11:02	108-60-1	
Pentachlorophenol	ND	ug/L	10.0	4.6	1	07/12/18 20:27	07/19/18 11:02	87-86-5	
Phenanthrene	ND	ug/L	5.0	0.22	1	07/12/18 20:27	07/19/18 11:02	85-01-8	
Phenol	ND	ug/L	5.0	1.9	1	07/12/18 20:27	07/19/18 11:02	108-95-2	
Pyrene	ND	ug/L	5.0	0.19	1	07/12/18 20:27	07/19/18 11:02	129-00-0	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.3	1	07/12/18 20:27	07/19/18 11:02	88-06-2	L2
Surrogates									
Nitrobenzene-d5 (S)	66	%	10-120		1	07/12/18 20:27	07/19/18 11:02	4165-60-0	
2-Fluorobiphenyl (S)	63	%	15-120		1	07/12/18 20:27	07/19/18 11:02	321-60-8	
Terphenyl-d14 (S)	74	%	11-131		1	07/12/18 20:27	07/19/18 11:02	1718-51-0	
Phenol-d6 (S)	25	%	10-120		1	07/12/18 20:27	07/19/18 11:02	13127-88-3	
2-Fluorophenol (S)	33	%	10-120		1	07/12/18 20:27	07/19/18 11:02	367-12-4	
2,4,6-Tribromophenol (S)	83	%	10-137		1	07/12/18 20:27	07/19/18 11:02	118-79-6	
624 Volatile Organics	Analytical Method: EPA 624								
Acrolein	ND	ug/L	5.0	1.0	1		07/14/18 00:07	107-02-8	
Acrylonitrile	ND	ug/L	50.0	11.5	1		07/14/18 00:07	107-13-1	
Benzene	ND	ug/L	2.0	1.7	1		07/14/18 00:07	71-43-2	
Bromodichloromethane	ND	ug/L	2.0	1.7	1		07/14/18 00:07	75-27-4	
Bromoform	ND	ug/L	2.0	1.5	1		07/14/18 00:07	75-25-2	
Bromomethane	ND	ug/L	2.0	1.0	1		07/14/18 00:07	74-83-9	
Carbon tetrachloride	ND	ug/L	2.0	1.9	1		07/14/18 00:07	56-23-5	
Chlorobenzene	ND	ug/L	2.0	1.7	1		07/14/18 00:07	108-90-7	
Chloroethane	ND	ug/L	2.0	1.6	1		07/14/18 00:07	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	5.0	2.2	1		07/14/18 00:07	110-75-8	c2
Chloroform	ND	ug/L	2.0	1.9	1		07/14/18 00:07	67-66-3	
Chloromethane	ND	ug/L	2.0	1.5	1		07/14/18 00:07	74-87-3	
Dibromochloromethane	ND	ug/L	2.0	1.8	1		07/14/18 00:07	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:07	106-46-7	
1,1-Dichloroethane	ND	ug/L	2.0	1.8	1		07/14/18 00:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	1.8	1		07/14/18 00:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.0	1.9	1		07/14/18 00:07	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	1.7	1		07/14/18 00:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/14/18 00:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/14/18 00:07	10061-02-6	
Ethylbenzene	ND	ug/L	2.0	1.6	1		07/14/18 00:07	100-41-4	
Methylene Chloride	ND	ug/L	2.0	1.9	1		07/14/18 00:07	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1.5	1		07/14/18 00:07	79-34-5	
Tetrachloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:07	127-18-4	
Toluene	ND	ug/L	2.0	1.6	1		07/14/18 00:07	108-88-3	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW008-D005 **Lab ID: 92391708002** Collected: 07/12/18 07:30 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624								
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1.7	1		07/14/18 00:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	1.9	1		07/14/18 00:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	1.7	1		07/14/18 00:07	79-00-5	
Trichloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	1.7	1		07/14/18 00:07	75-69-4	
Vinyl chloride	ND	ug/L	2.0	1.5	1		07/14/18 00:07	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		07/14/18 00:07	460-00-4	
Toluene-d8 (S)	110	%	70-130		1		07/14/18 00:07	2037-26-5	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		07/14/18 00:07	17060-07-0	
420.4 Phenolics, Total	Analytical Method: EPA 420.4 Rev 1.0 1993								
Phenol	**0.0066J**	mg/L	0.010	0.0050	1		07/19/18 12:52	108-95-2	B,B0
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E-2011								
Cyanide	ND	mg/L	0.0080	0.0040	1		07/17/18 15:17	57-12-5	

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW012-F005 **Lab ID: 92391708003** Collected: 07/12/18 09:55 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
608 PCB Pest RVE	Analytical Method: EPA 608.3 Preparation Method: EPA 608.3								
Aldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	07/18/18 23:58	07/19/18 17:41	1024-57-3	
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	11096-82-5	
Toxaphene	ND	ug/L	0.50	0.50	1	07/18/18 23:58	07/19/18 17:41	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	66	%	60-140		1	07/18/18 23:58	07/19/18 17:41	877-09-8	
Decachlorobiphenyl (S)	61	%	60-140		1	07/18/18 23:58	07/19/18 17:41	2051-24-3	
200.7 MET ICP	Analytical Method: EPA 200.7 Rev 4.4 1994 Preparation Method: EPA 200.7 Rev 4.4 1994								
Antimony	ND	ug/L	5.0	3.9	1	07/13/18 05:20	07/14/18 03:40	7440-36-0	
Arsenic	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:40	7440-38-2	
Beryllium	ND	ug/L	1.0	0.050	1	07/13/18 05:20	07/14/18 03:40	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	07/13/18 05:20	07/14/18 03:40	7440-43-9	
Chromium	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7440-47-3	
Copper	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7440-50-8	
Lead	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7439-92-1	
Nickel	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:40	7782-49-2	
Silver	ND	ug/L	5.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7440-22-4	
Thallium	ND	ug/L	10.0	5.0	1	07/13/18 05:20	07/14/18 03:40	7440-28-0	
Zinc	ND	ug/L	10.0	2.5	1	07/13/18 05:20	07/14/18 03:40	7440-66-6	
245.1 Mercury	Analytical Method: EPA 245.1 Rev 3.0 1994 Preparation Method: EPA 245.1 Rev 3.0 1994								
Mercury	ND	ug/L	0.20	0.070	1	07/13/18 14:50	07/16/18 09:48	7439-97-6	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW012-F005 **Lab ID: 92391708003** Collected: 07/12/18 09:55 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
Acenaphthene	ND	ug/L	4.8	0.24	1	07/14/18 02:26	07/19/18 12:58	83-32-9	
Acenaphthylene	ND	ug/L	4.8	0.20	1	07/14/18 02:26	07/19/18 12:58	208-96-8	
Anthracene	ND	ug/L	4.8	0.13	1	07/14/18 02:26	07/19/18 12:58	120-12-7	
Benzidine	ND	ug/L	48.1	4.9	1	07/14/18 02:26	07/19/18 12:58	92-87-5	L2
Benzo(a)anthracene	ND	ug/L	4.8	0.32	1	07/14/18 02:26	07/19/18 12:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	4.8	0.29	1	07/14/18 02:26	07/19/18 12:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	4.8	0.27	1	07/14/18 02:26	07/19/18 12:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	4.8	0.37	1	07/14/18 02:26	07/19/18 12:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	4.8	0.41	1	07/14/18 02:26	07/19/18 12:58	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	4.8	0.79	1	07/14/18 02:26	07/19/18 12:58	101-55-3	
Butylbenzylphthalate	ND	ug/L	4.8	0.76	1	07/14/18 02:26	07/19/18 12:58	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	4.8	3.6	1	07/14/18 02:26	07/19/18 12:58	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	9.6	0.88	1	07/14/18 02:26	07/19/18 12:58	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	4.8	0.96	1	07/14/18 02:26	07/19/18 12:58	111-44-4	
2-Chloronaphthalene	ND	ug/L	4.8	0.94	1	07/14/18 02:26	07/19/18 12:58	91-58-7	
2-Chlorophenol	ND	ug/L	4.8	1.2	1	07/14/18 02:26	07/19/18 12:58	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	4.8	0.84	1	07/14/18 02:26	07/19/18 12:58	7005-72-3	
Chrysene	ND	ug/L	4.8	0.20	1	07/14/18 02:26	07/19/18 12:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	4.8	0.53	1	07/14/18 02:26	07/19/18 12:58	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	24.0	2.0	1	07/14/18 02:26	07/19/18 12:58	91-94-1	
2,4-Dichlorophenol	ND	ug/L	4.8	1.6	1	07/14/18 02:26	07/19/18 12:58	120-83-2	
Diethylphthalate	ND	ug/L	4.8	0.56	1	07/14/18 02:26	07/19/18 12:58	84-66-2	
2,4-Dimethylphenol	ND	ug/L	9.6	1.2	1	07/14/18 02:26	07/19/18 12:58	105-67-9	
Dimethylphthalate	ND	ug/L	4.8	0.73	1	07/14/18 02:26	07/19/18 12:58	131-11-3	
Di-n-butylphthalate	ND	ug/L	4.8	0.72	1	07/14/18 02:26	07/19/18 12:58	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	19.2	2.5	1	07/14/18 02:26	07/19/18 12:58	534-52-1	
2,4-Dinitrophenol	ND	ug/L	48.1	8.7	1	07/14/18 02:26	07/19/18 12:58	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	4.8	0.87	1	07/14/18 02:26	07/19/18 12:58	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	4.8	0.94	1	07/14/18 02:26	07/19/18 12:58	606-20-2	
Di-n-octylphthalate	ND	ug/L	4.8	0.63	1	07/14/18 02:26	07/19/18 12:58	117-84-0	
1,2-Diphenylhydrazine	ND	ug/L	4.8	0.87	1	07/14/18 02:26	07/19/18 12:58	122-66-7	
bis(2-Ethylhexyl)phthalate	ND	ug/L	4.8	0.76	1	07/14/18 02:26	07/19/18 12:58	117-81-7	
Fluoranthene	ND	ug/L	4.8	0.20	1	07/14/18 02:26	07/19/18 12:58	206-44-0	
Fluorene	ND	ug/L	4.8	0.20	1	07/14/18 02:26	07/19/18 12:58	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	4.8	0.90	1	07/14/18 02:26	07/19/18 12:58	87-68-3	
Hexachlorobenzene	ND	ug/L	4.8	0.69	1	07/14/18 02:26	07/19/18 12:58	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	9.6	0.85	1	07/14/18 02:26	07/19/18 12:58	77-47-4	
Hexachloroethane	ND	ug/L	4.8	1.1	1	07/14/18 02:26	07/19/18 12:58	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	4.8	0.28	1	07/14/18 02:26	07/19/18 12:58	193-39-5	
Isophorone	ND	ug/L	9.6	0.86	1	07/14/18 02:26	07/19/18 12:58	78-59-1	
2-Methylnaphthalene	ND	ug/L	4.8	0.27	1	07/14/18 02:26	07/19/18 12:58	91-57-6	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	9.6	1.9	1	07/14/18 02:26	07/19/18 12:58	15831-10-4	N2
Naphthalene	**1.1J**	ug/L	4.8	0.33	1	07/14/18 02:26	07/19/18 12:58	91-20-3	
Nitrobenzene	ND	ug/L	4.8	1.1	1	07/14/18 02:26	07/19/18 12:58	98-95-3	
2-Nitrophenol	ND	ug/L	4.8	0.88	1	07/14/18 02:26	07/19/18 12:58	88-75-5	
4-Nitrophenol	ND	ug/L	48.1	3.9	1	07/14/18 02:26	07/19/18 12:58	100-02-7	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW012-F005 **Lab ID: 92391708003** Collected: 07/12/18 09:55 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625.1 Preparation Method: EPA 625.1								
N-Nitrosodimethylamine	ND	ug/L	4.8	0.88	1	07/14/18 02:26	07/19/18 12:58	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	4.8	0.95	1	07/14/18 02:26	07/19/18 12:58	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	9.6	0.96	1	07/14/18 02:26	07/19/18 12:58	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	4.8	0.91	1	07/14/18 02:26	07/19/18 12:58	108-60-1	
Pentachlorophenol	ND	ug/L	9.6	4.4	1	07/14/18 02:26	07/19/18 12:58	87-86-5	
Phenanthrene	ND	ug/L	4.8	0.21	1	07/14/18 02:26	07/19/18 12:58	85-01-8	
Phenol	ND	ug/L	4.8	1.8	1	07/14/18 02:26	07/19/18 12:58	108-95-2	
Pyrene	ND	ug/L	4.8	0.18	1	07/14/18 02:26	07/19/18 12:58	129-00-0	
2,4,6-Trichlorophenol	ND	ug/L	9.6	1.2	1	07/14/18 02:26	07/19/18 12:58	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	70	%	10-120		1	07/14/18 02:26	07/19/18 12:58	4165-60-0	
2-Fluorobiphenyl (S)	64	%	15-120		1	07/14/18 02:26	07/19/18 12:58	321-60-8	
Terphenyl-d14 (S)	61	%	11-131		1	07/14/18 02:26	07/19/18 12:58	1718-51-0	
Phenol-d6 (S)	24	%	10-120		1	07/14/18 02:26	07/19/18 12:58	13127-88-3	
2-Fluorophenol (S)	37	%	10-120		1	07/14/18 02:26	07/19/18 12:58	367-12-4	
2,4,6-Tribromophenol (S)	87	%	10-137		1	07/14/18 02:26	07/19/18 12:58	118-79-6	
624 Volatile Organics	Analytical Method: EPA 624								
Acrolein	ND	ug/L	5.0	1.0	1		07/14/18 00:24	107-02-8	
Acrylonitrile	ND	ug/L	50.0	11.5	1		07/14/18 00:24	107-13-1	
Benzene	ND	ug/L	2.0	1.7	1		07/14/18 00:24	71-43-2	
Bromodichloromethane	ND	ug/L	2.0	1.7	1		07/14/18 00:24	75-27-4	
Bromoform	ND	ug/L	2.0	1.5	1		07/14/18 00:24	75-25-2	
Bromomethane	ND	ug/L	2.0	1.0	1		07/14/18 00:24	74-83-9	
Carbon tetrachloride	ND	ug/L	2.0	1.9	1		07/14/18 00:24	56-23-5	
Chlorobenzene	ND	ug/L	2.0	1.7	1		07/14/18 00:24	108-90-7	
Chloroethane	ND	ug/L	2.0	1.6	1		07/14/18 00:24	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	5.0	2.2	1		07/14/18 00:24	110-75-8	c2
Chloroform	ND	ug/L	2.0	1.9	1		07/14/18 00:24	67-66-3	
Chloromethane	ND	ug/L	2.0	1.5	1		07/14/18 00:24	74-87-3	
Dibromochloromethane	ND	ug/L	2.0	1.8	1		07/14/18 00:24	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/14/18 00:24	106-46-7	
1,1-Dichloroethane	ND	ug/L	2.0	1.8	1		07/14/18 00:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	1.8	1		07/14/18 00:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.0	1.9	1		07/14/18 00:24	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	1.7	1		07/14/18 00:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/14/18 00:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/14/18 00:24	10061-02-6	
Ethylbenzene	ND	ug/L	2.0	1.6	1		07/14/18 00:24	100-41-4	
Methylene Chloride	ND	ug/L	2.0	1.9	1		07/14/18 00:24	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1.5	1		07/14/18 00:24	79-34-5	
Tetrachloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:24	127-18-4	
Toluene	ND	ug/L	2.0	1.6	1		07/14/18 00:24	108-88-3	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-SW012-F005 **Lab ID: 92391708003** Collected: 07/12/18 09:55 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624								
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1.7	1		07/14/18 00:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	1.9	1		07/14/18 00:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	1.7	1		07/14/18 00:24	79-00-5	
Trichloroethene	ND	ug/L	2.0	1.8	1		07/14/18 00:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	1.7	1		07/14/18 00:24	75-69-4	
Vinyl chloride	ND	ug/L	2.0	1.5	1		07/14/18 00:24	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		1		07/14/18 00:24	460-00-4	
Toluene-d8 (S)	113	%	70-130		1		07/14/18 00:24	2037-26-5	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		07/14/18 00:24	17060-07-0	
420.4 Phenolics, Total	Analytical Method: EPA 420.4 Rev 1.0 1993								
Phenol	**0.0064J**	mg/L	0.010	0.0050	1		07/19/18 12:52	108-95-2	B,B0
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E-2011								
Cyanide	ND	mg/L	0.0080	0.0040	1		07/25/18 05:58	57-12-5	

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ANALYTICAL RESULTS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Sample: ABL-TB001-F005 **Lab ID: 92391708004** Collected: 07/12/18 00:00 Received: 07/12/18 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624								
Acrolein	ND	ug/L	5.0	1.0	1		07/13/18 21:19	107-02-8	
Acrylonitrile	ND	ug/L	50.0	11.5	1		07/13/18 21:19	107-13-1	
Benzene	ND	ug/L	2.0	1.7	1		07/13/18 21:19	71-43-2	
Bromodichloromethane	ND	ug/L	2.0	1.7	1		07/13/18 21:19	75-27-4	
Bromoform	ND	ug/L	2.0	1.5	1		07/13/18 21:19	75-25-2	
Bromomethane	ND	ug/L	2.0	1.0	1		07/13/18 21:19	74-83-9	
Carbon tetrachloride	ND	ug/L	2.0	1.9	1		07/13/18 21:19	56-23-5	
Chlorobenzene	ND	ug/L	2.0	1.7	1		07/13/18 21:19	108-90-7	
Chloroethane	ND	ug/L	2.0	1.6	1		07/13/18 21:19	75-00-3	
2-Chloroethylvinyl ether	ND	ug/L	5.0	2.2	1		07/13/18 21:19	110-75-8	c2
Chloroform	ND	ug/L	2.0	1.9	1		07/13/18 21:19	67-66-3	
Chloromethane	ND	ug/L	2.0	1.5	1		07/13/18 21:19	74-87-3	
Dibromochloromethane	ND	ug/L	2.0	1.8	1		07/13/18 21:19	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 21:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 21:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	1.5	1		07/13/18 21:19	106-46-7	
1,1-Dichloroethane	ND	ug/L	2.0	1.8	1		07/13/18 21:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	1.8	1		07/13/18 21:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.0	1.9	1		07/13/18 21:19	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1.8	1		07/13/18 21:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	1.7	1		07/13/18 21:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/13/18 21:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1.6	1		07/13/18 21:19	10061-02-6	
Ethylbenzene	ND	ug/L	2.0	1.6	1		07/13/18 21:19	100-41-4	
Methylene Chloride	ND	ug/L	2.0	1.9	1		07/13/18 21:19	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1.5	1		07/13/18 21:19	79-34-5	
Tetrachloroethene	ND	ug/L	2.0	1.8	1		07/13/18 21:19	127-18-4	
Toluene	ND	ug/L	2.0	1.6	1		07/13/18 21:19	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1.7	1		07/13/18 21:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	1.9	1		07/13/18 21:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	1.7	1		07/13/18 21:19	79-00-5	
Trichloroethene	ND	ug/L	2.0	1.8	1		07/13/18 21:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	1.7	1		07/13/18 21:19	75-69-4	
Vinyl chloride	ND	ug/L	2.0	1.5	1		07/13/18 21:19	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		1		07/13/18 21:19	460-00-4	
Toluene-d8 (S)	110	%	70-130		1		07/13/18 21:19	2037-26-5	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		07/13/18 21:19	17060-07-0	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419061 | Analysis Method: EPA 245.1 Rev 3.0 1994
QC Batch Method: EPA 245.1 Rev 3.0 1994 | Analysis Description: 245.1 Mercury
Associated Lab Samples: 92391708001, 92391708002, 92391708003

METHOD BLANK: 2322893 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002, 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.070	07/16/18 09:17	

LABORATORY CONTROL SAMPLE: 2322894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322895 2322896

Parameter	Units	92391570001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.070J	2.5	2.5	2.4	2.5	92	96	70-130	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322897 2322898

Parameter	Units	92391792002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.090J	2.5	2.5	2.4	2.4	91	94	70-130	3	20	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 418969 | Analysis Method: EPA 200.7 Rev 4.4 1994
QC Batch Method: EPA 200.7 Rev 4.4 1994 | Analysis Description: 200.7 MET
Associated Lab Samples: 92391708001, 92391708002, 92391708003

METHOD BLANK: 2322457 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002, 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	3.9	07/14/18 01:56	
Arsenic	ug/L	ND	10.0	5.0	07/14/18 01:56	
Beryllium	ug/L	ND	1.0	0.050	07/14/18 01:56	
Cadmium	ug/L	ND	1.0	0.50	07/14/18 01:56	
Chromium	ug/L	ND	5.0	2.5	07/14/18 01:56	
Copper	ug/L	ND	5.0	2.5	07/14/18 01:56	
Lead	ug/L	ND	5.0	2.5	07/14/18 01:56	
Nickel	ug/L	ND	5.0	2.5	07/14/18 01:56	
Selenium	ug/L	ND	10.0	5.0	07/14/18 01:56	
Silver	ug/L	ND	5.0	2.5	07/14/18 01:56	
Thallium	ug/L	ND	10.0	5.0	07/14/18 01:56	
Zinc	ug/L	ND	10.0	2.5	07/14/18 15:44	

LABORATORY CONTROL SAMPLE: 2322458

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	472	94	85-115	
Arsenic	ug/L	500	462	92	85-115	
Beryllium	ug/L	500	467	93	85-115	
Cadmium	ug/L	500	460	92	85-115	
Chromium	ug/L	500	462	92	85-115	
Copper	ug/L	500	469	94	85-115	
Lead	ug/L	500	458	92	85-115	
Nickel	ug/L	500	460	92	85-115	
Selenium	ug/L	500	454	91	85-115	
Silver	ug/L	250	235	94	85-115	
Thallium	ug/L	500	462	92	85-115	
Zinc	ug/L	500	462	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322459 2322460

Parameter	Units	92391643001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	484	492	97	98	70-130	1	20	
Arsenic	ug/L	ND	500	500	481	491	96	98	70-130	2	20	
Beryllium	ug/L	ND	500	500	480	483	96	97	70-130	1	20	
Cadmium	ug/L	ND	500	500	475	480	95	96	70-130	1	20	
Chromium	ug/L	ND	500	500	471	478	94	95	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322459 2322460

Parameter	Units	92391643001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	ND	500	500	479	486	95	97	70-130	1	20	
Lead	ug/L	ND	500	500	464	471	93	94	70-130	1	20	
Nickel	ug/L	5.9	500	500	472	478	93	94	70-130	1	20	
Selenium	ug/L	ND	500	500	480	486	96	97	70-130	1	20	
Silver	ug/L	ND	250	250	239	243	95	97	70-130	2	20	
Thallium	ug/L	ND	500	500	467	471	93	94	70-130	1	20	
Zinc	ug/L	206	500	500	674	679	94	95	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322461 2322462

Parameter	Units	92391663003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	497	488	99	97	70-130	2	20	
Arsenic	ug/L	ND	500	500	498	488	99	97	70-130	2	20	
Beryllium	ug/L	ND	500	500	484	476	97	95	70-130	2	20	
Cadmium	ug/L	ND	500	500	482	473	96	94	70-130	2	20	
Chromium	ug/L	ND	500	500	484	474	96	94	70-130	2	20	
Copper	ug/L	0.28 mg/L	500	500	754	748	95	94	70-130	1	20	
Lead	ug/L	0.041 mg/L	500	500	494	487	91	89	70-130	1	20	
Nickel	ug/L	ND	500	500	460	452	92	90	70-130	2	20	
Selenium	ug/L	ND	500	500	482	473	96	94	70-130	2	20	
Silver	ug/L	ND	250	250	243	241	97	96	70-130	1	20	
Thallium	ug/L	ND	500	500	432	423	86	85	70-130	2	20	
Zinc	ug/L	0.083 mg/L	500	500	552	546	94	93	70-130	1	20	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419109 | Analysis Method: EPA 624
QC Batch Method: EPA 624 | Analysis Description: 624 MSV
Associated Lab Samples: 92391708001, 92391708002, 92391708003, 92391708004

METHOD BLANK: 2323313 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002, 92391708003, 92391708004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	2.0	1.9	07/13/18 20:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	2.0	1.5	07/13/18 20:11	
1,1,2-Trichloroethane	ug/L	ND	2.0	1.7	07/13/18 20:11	
1,1-Dichloroethane	ug/L	ND	2.0	1.8	07/13/18 20:11	
1,1-Dichloroethene	ug/L	ND	2.0	1.9	07/13/18 20:11	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	1.7	07/13/18 20:11	
1,2-Dichlorobenzene	ug/L	ND	2.0	1.5	07/13/18 20:11	
1,2-Dichloroethane	ug/L	ND	2.0	1.8	07/13/18 20:11	
1,2-Dichloropropane	ug/L	ND	2.0	1.7	07/13/18 20:11	
1,3-Dichlorobenzene	ug/L	ND	2.0	1.5	07/13/18 20:11	
1,4-Dichlorobenzene	ug/L	ND	2.0	1.5	07/13/18 20:11	
2-Chloroethylvinyl ether	ug/L	ND	5.0	2.2	07/13/18 20:11	
Acrolein	ug/L	ND	5.0	1.0	07/13/18 20:11	
Acrylonitrile	ug/L	ND	50.0	11.5	07/13/18 20:11	
Benzene	ug/L	ND	2.0	1.7	07/13/18 20:11	
Bromodichloromethane	ug/L	ND	2.0	1.7	07/13/18 20:11	
Bromoform	ug/L	ND	2.0	1.5	07/13/18 20:11	
Bromomethane	ug/L	ND	2.0	1.0	07/13/18 20:11	
Carbon tetrachloride	ug/L	ND	2.0	1.9	07/13/18 20:11	
Chlorobenzene	ug/L	ND	2.0	1.7	07/13/18 20:11	
Chloroethane	ug/L	ND	2.0	1.6	07/13/18 20:11	
Chloroform	ug/L	ND	2.0	1.9	07/13/18 20:11	
Chloromethane	ug/L	ND	2.0	1.5	07/13/18 20:11	
cis-1,3-Dichloropropene	ug/L	ND	2.0	1.6	07/13/18 20:11	
Dibromochloromethane	ug/L	ND	2.0	1.8	07/13/18 20:11	
Ethylbenzene	ug/L	ND	2.0	1.6	07/13/18 20:11	
Methylene Chloride	ug/L	ND	2.0	1.9	07/13/18 20:11	
Tetrachloroethene	ug/L	ND	2.0	1.8	07/13/18 20:11	
Toluene	ug/L	ND	2.0	1.6	07/13/18 20:11	
trans-1,2-Dichloroethene	ug/L	ND	2.0	1.8	07/13/18 20:11	
trans-1,3-Dichloropropene	ug/L	ND	2.0	1.6	07/13/18 20:11	
Trichloroethene	ug/L	ND	2.0	1.8	07/13/18 20:11	
Trichlorofluoromethane	ug/L	ND	2.0	1.7	07/13/18 20:11	
Vinyl chloride	ug/L	ND	2.0	1.5	07/13/18 20:11	
1,2-Dichloroethane-d4 (S)	%	100	70-130		07/13/18 20:11	
4-Bromofluorobenzene (S)	%	106	70-130		07/13/18 20:11	
Toluene-d8 (S)	%	111	70-130		07/13/18 20:11	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

LABORATORY CONTROL SAMPLE: 2323314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.6	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	97	60-140	
1,1,2-Trichloroethane	ug/L	20	19.5	97	70-130	
1,1-Dichloroethane	ug/L	20	19.2	96	70-130	
1,1-Dichloroethene	ug/L	20	20.8	104	50-150	
1,2,4-Trichlorobenzene	ug/L	20	20.4	102	70-130	
1,2-Dichlorobenzene	ug/L	20	19.2	96	65-135	
1,2-Dichloroethane	ug/L	20	19.3	97	49-155	
1,2-Dichloropropane	ug/L	20	20.9	105	35-165	
1,3-Dichlorobenzene	ug/L	20	19.5	98	70-130	
1,4-Dichlorobenzene	ug/L	20	19.5	97	65-135	
2-Chloroethylvinyl ether	ug/L	40	39.1	98	1-225	
Acrolein	ug/L	100	137	137	60-140	
Acrylonitrile	ug/L	100	98.5	98	60-140	
Benzene	ug/L	20	19.9	100	65-135	
Bromodichloromethane	ug/L	20	20.9	104	65-135	
Bromoform	ug/L	20	19.4	97	70-130	
Bromomethane	ug/L	20	18.8	94	15-185	
Carbon tetrachloride	ug/L	20	20.4	102	70-130	
Chlorobenzene	ug/L	20	19.2	96	65-135	
Chloroethane	ug/L	20	17.3	87	40-160	
Chloroform	ug/L	20	17.7	88	70-135	
Chloromethane	ug/L	20	17.4	87	1-205	
cis-1,3-Dichloropropene	ug/L	20	20.5	103	25-175	
Dibromochloromethane	ug/L	20	19.8	99	70-135	
Ethylbenzene	ug/L	20	19.1	96	60-140	
Methylene Chloride	ug/L	20	21.0	105	60-140	
Tetrachloroethene	ug/L	20	18.1	90	70-130	
Toluene	ug/L	20	19.0	95	70-130	
trans-1,2-Dichloroethene	ug/L	20	19.9	99	70-130	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	50-150	
Trichloroethene	ug/L	20	20.4	102	65-135	
Trichlorofluoromethane	ug/L	20	20.4	102	50-150	
Vinyl chloride	ug/L	20	19.8	99	5-195	
1,2-Dichloroethane-d4 (S)	%			114	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2323315 2323316

Parameter	Units	92391643001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	24.3	25.5	122	128	52-162	5	36	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.9	22.8	104	114	46-157	9	61	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.2	23.2	111	116	52-150	4	45	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2323315 2323316

Parameter	Units	92391643001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	22.2	23.8	111	119	59-155	7	40	
1,1-Dichloroethene	ug/L	ND	20	20	24.3	26.0	121	130	1-234	7	32	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	17.9	19.5	89	97	70-130	9	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.3	21.8	101	109	18-190	7	57	
1,2-Dichloroethane	ug/L	ND	20	20	22.1	23.7	110	118	49-155	7	49	
1,2-Dichloropropane	ug/L	ND	20	20	23.5	24.8	118	124	1-210	5	55	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.4	21.6	102	108	59-156	5	43	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.4	21.7	102	109	18-190	6	57	
2-Chloroethylvinyl ether	ug/L	ND	40	40	ND	ND	0	0	1-305		71	M1
Acrolein	ug/L	ND	100	100	111	151	111	151	40-160	31	60	
Acrylonitrile	ug/L	ND	100	100	117	119	117	119	40-160	2	60	
Benzene	ug/L	ND	20	20	23.6	25.3	118	127	37-151	7	61	
Bromodichloromethane	ug/L	ND	20	20	23.7	25.0	118	125	35-155	6	56	
Bromoform	ug/L	ND	20	20	20.6	22.4	103	112	45-169	8	42	
Bromomethane	ug/L	ND	20	20	13.5	18.5	67	93	1-242	32	61	
Carbon tetrachloride	ug/L	ND	20	20	24.2	25.5	121	127	70-140	5	41	
Chlorobenzene	ug/L	ND	20	20	21.8	23.8	109	119	37-160	9	53	
Chloroethane	ug/L	ND	20	20	19.5	21.2	98	106	14-230	8	78	
Chloroform	ug/L	ND	20	20	19.9	21.4	100	107	51-138	7	54	
Chloromethane	ug/L	ND	20	20	18.1	19.2	91	96	1-273	6	60	
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.8	24.3	114	121	1-227	6	58	
Dibromochloromethane	ug/L	ND	20	20	22.2	24.5	111	123	53-149	10	50	
Ethylbenzene	ug/L	ND	20	20	22.0	24.0	110	120	37-162	9	63	
Methylene Chloride	ug/L	ND	20	20	23.3	24.3	116	122	1-221	4	28	
Tetrachloroethene	ug/L	ND	20	20	20.9	22.4	104	112	64-148	7	39	
Toluene	ug/L	ND	20	20	21.7	22.8	108	114	47-150	5	41	
trans-1,2-Dichloroethene	ug/L	ND	20	20	23.4	24.8	117	124	54-156	6	45	
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.2	23.6	111	118	17-183	6	86	
Trichloroethene	ug/L	ND	20	20	24.1	25.7	120	128	70-157	6	48	
Trichlorofluoromethane	ug/L	ND	20	20	24.5	25.1	123	125	17-181	2	84	
Vinyl chloride	ug/L	ND	20	20	23.4	24.8	117	124	1-251	6	66	
1,2-Dichloroethane-d4 (S)	%						110	107	70-130			
4-Bromofluorobenzene (S)	%						99	101	70-130			
Toluene-d8 (S)	%						100	99	70-130			

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419893 | Analysis Method: EPA 608.3
QC Batch Method: EPA 608.3 | Analysis Description: 608 PCB Pest Red Vol
Associated Lab Samples: 92391708001, 92391708002, 92391708003

METHOD BLANK: 2326921 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002, 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	0.050	07/19/18 15:14	
4,4'-DDE	ug/L	ND	0.050	0.050	07/19/18 15:14	
4,4'-DDT	ug/L	ND	0.050	0.050	07/19/18 15:14	
Aldrin	ug/L	ND	0.050	0.050	07/19/18 15:14	
alpha-BHC	ug/L	ND	0.050	0.050	07/19/18 15:14	
beta-BHC	ug/L	ND	0.050	0.050	07/19/18 15:14	
Chlordane (Technical)	ug/L	ND	0.50	0.50	07/19/18 15:14	
delta-BHC	ug/L	ND	0.050	0.050	07/19/18 15:14	
Dieldrin	ug/L	ND	0.050	0.050	07/19/18 15:14	
Endosulfan I	ug/L	ND	0.050	0.050	07/19/18 15:14	
Endosulfan II	ug/L	ND	0.050	0.050	07/19/18 15:14	
Endosulfan sulfate	ug/L	ND	0.050	0.050	07/19/18 15:14	
Endrin	ug/L	ND	0.050	0.050	07/19/18 15:14	
Endrin aldehyde	ug/L	ND	0.050	0.050	07/19/18 15:14	
gamma-BHC (Lindane)	ug/L	ND	0.050	0.050	07/19/18 15:14	
Heptachlor	ug/L	ND	0.050	0.050	07/19/18 15:14	
Heptachlor epoxide	ug/L	ND	0.050	0.050	07/19/18 15:14	
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	07/19/18 15:14	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	07/19/18 15:14	
Toxaphene	ug/L	ND	0.50	0.50	07/19/18 15:14	
Decachlorobiphenyl (S)	%	84	60-140		07/19/18 15:14	
Tetrachloro-m-xylene (S)	%	81	60-140		07/19/18 15:14	

LABORATORY CONTROL SAMPLE: 2326922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.23	94	31-141	
4,4'-DDE	ug/L	.25	0.23	91	30-145	
4,4'-DDT	ug/L	.25	0.23	91	25-160	
Aldrin	ug/L	.25	0.14	57	42-140	
alpha-BHC	ug/L	.25	0.22	86	37-140	
beta-BHC	ug/L	.25	0.19	75	17-147	
delta-BHC	ug/L	.25	0.23	92	19-140	
Dieldrin	ug/L	.25	0.22	86	36-146	
Endosulfan I	ug/L	.25	0.20	81	45-153	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

LABORATORY CONTROL SAMPLE: 2326922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endosulfan II	ug/L	.25	0.23	92	1-202	
Endosulfan sulfate	ug/L	.25	0.24	96	26-144	
Endrin	ug/L	.25	0.22	90	30-147	
Endrin aldehyde	ug/L	.25	0.23	91	50-150	
gamma-BHC (Lindane)	ug/L	.25	0.22	89	32-140	
Heptachlor	ug/L	.25	0.18	73	34-140	
Heptachlor epoxide	ug/L	.25	0.22	87	37-142	
Decachlorobiphenyl (S)	%			90	60-140	
Tetrachloro-m-xylene (S)	%			86	60-140	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 418950 | Analysis Method: EPA 625.1
QC Batch Method: EPA 625.1 | Analysis Description: 625 MSS
Associated Lab Samples: 92391708001, 92391708002

METHOD BLANK: 2322394 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	5.0	0.90	07/13/18 13:51	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	5.0	0.95	07/13/18 13:51	
2,4,6-Trichlorophenol	ug/L	ND	10.0	1.3	07/13/18 13:51	
2,4-Dichlorophenol	ug/L	ND	5.0	1.7	07/13/18 13:51	
2,4-Dimethylphenol	ug/L	ND	10.0	1.2	07/13/18 13:51	
2,4-Dinitrophenol	ug/L	ND	50.0	9.0	07/13/18 13:51	
2,4-Dinitrotoluene	ug/L	ND	5.0	0.90	07/13/18 13:51	
2,6-Dinitrotoluene	ug/L	ND	5.0	0.98	07/13/18 13:51	
2-Chloronaphthalene	ug/L	ND	5.0	0.98	07/13/18 13:51	
2-Chlorophenol	ug/L	ND	5.0	1.3	07/13/18 13:51	
2-Methylnaphthalene	ug/L	ND	5.0	0.28	07/13/18 13:51	
2-Nitrophenol	ug/L	ND	5.0	0.91	07/13/18 13:51	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	10.0	2.0	07/13/18 13:51	N2
3,3'-Dichlorobenzidine	ug/L	ND	25.0	2.1	07/13/18 13:51	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	2.6	07/13/18 13:51	
4-Bromophenylphenyl ether	ug/L	ND	5.0	0.82	07/13/18 13:51	
4-Chloro-3-methylphenol	ug/L	ND	5.0	3.7	07/13/18 13:51	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	0.87	07/13/18 13:51	
4-Nitrophenol	ug/L	ND	50.0	4.1	07/13/18 13:51	
Acenaphthene	ug/L	ND	5.0	0.25	07/13/18 13:51	
Acenaphthylene	ug/L	ND	5.0	0.21	07/13/18 13:51	
Anthracene	ug/L	ND	5.0	0.14	07/13/18 13:51	
Benzidine	ug/L	ND	50.0	5.1	07/13/18 13:51	
Benzo(a)anthracene	ug/L	ND	5.0	0.33	07/13/18 13:51	
Benzo(a)pyrene	ug/L	ND	5.0	0.30	07/13/18 13:51	
Benzo(b)fluoranthene	ug/L	ND	5.0	0.28	07/13/18 13:51	
Benzo(g,h,i)perylene	ug/L	ND	5.0	0.38	07/13/18 13:51	
Benzo(k)fluoranthene	ug/L	ND	5.0	0.43	07/13/18 13:51	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	0.92	07/13/18 13:51	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	1.0	07/13/18 13:51	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	0.79	07/13/18 13:51	
Butylbenzylphthalate	ug/L	ND	5.0	0.79	07/13/18 13:51	
Chrysene	ug/L	ND	5.0	0.21	07/13/18 13:51	
Di-n-butylphthalate	ug/L	ND	5.0	0.75	07/13/18 13:51	
Di-n-octylphthalate	ug/L	ND	5.0	0.66	07/13/18 13:51	
Dibenz(a,h)anthracene	ug/L	ND	5.0	0.55	07/13/18 13:51	
Diethylphthalate	ug/L	ND	5.0	0.58	07/13/18 13:51	
Dimethylphthalate	ug/L	ND	5.0	0.76	07/13/18 13:51	
Fluoranthene	ug/L	ND	5.0	0.21	07/13/18 13:51	
Fluorene	ug/L	ND	5.0	0.21	07/13/18 13:51	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	0.94	07/13/18 13:51	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

METHOD BLANK: 2322394 Matrix: Water
Associated Lab Samples: 92391708001, 92391708002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Hexachlorobenzene	ug/L	ND	5.0	0.72	07/13/18 13:51	
Hexachlorocyclopentadiene	ug/L	ND	10.0	0.88	07/13/18 13:51	
Hexachloroethane	ug/L	ND	5.0	1.1	07/13/18 13:51	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	0.29	07/13/18 13:51	
Isophorone	ug/L	ND	10.0	0.89	07/13/18 13:51	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	0.99	07/13/18 13:51	
N-Nitrosodimethylamine	ug/L	ND	5.0	0.91	07/13/18 13:51	
N-Nitrosodiphenylamine	ug/L	ND	10.0	1.0	07/13/18 13:51	
Naphthalene	ug/L	ND	5.0	0.34	07/13/18 13:51	
Nitrobenzene	ug/L	ND	5.0	1.1	07/13/18 13:51	
Pentachlorophenol	ug/L	ND	10.0	4.6	07/13/18 13:51	
Phenanthrene	ug/L	ND	5.0	0.22	07/13/18 13:51	
Phenol	ug/L	ND	5.0	1.9	07/13/18 13:51	
Pyrene	ug/L	ND	5.0	0.19	07/13/18 13:51	
2,4,6-Tribromophenol (S)	%	54	10-137		07/13/18 13:51	
2-Fluorobiphenyl (S)	%	71	15-120		07/13/18 13:51	
2-Fluorophenol (S)	%	35	10-120		07/13/18 13:51	
Nitrobenzene-d5 (S)	%	78	10-120		07/13/18 13:51	
Phenol-d6 (S)	%	23	10-120		07/13/18 13:51	
Terphenyl-d14 (S)	%	79	11-131		07/13/18 13:51	

LABORATORY CONTROL SAMPLE: 2322395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Diphenylhydrazine	ug/L	50	35.6	71	25-150	
2,2'-Oxybis(1-chloropropane)	ug/L	50	32.5	65	36-166	
2,4,6-Trichlorophenol	ug/L	50	12.2	24	37-144	L2
2,4-Dichlorophenol	ug/L	50	21.5	43	39-135	
2,4-Dimethylphenol	ug/L	50	33.2	66	32-120	
2,4-Dinitrophenol	ug/L	250	13.7J	5	1-191	
2,4-Dinitrotoluene	ug/L	50	38.8	78	39-139	
2,6-Dinitrotoluene	ug/L	50	40.3	81	50-158	
2-Chloronaphthalene	ug/L	50	30.9	62	60-120	
2-Chlorophenol	ug/L	50	22.6	45	23-134	
2-Methylnaphthalene	ug/L	50	31.1	62	25-150	
2-Nitrophenol	ug/L	50	19.3	39	29-181	
3&4-Methylphenol(m&p Cresol)	ug/L	50	23.1	46	25-150	N2
3,3'-Dichlorobenzidine	ug/L	100	60.8	61	1-262	
4,6-Dinitro-2-methylphenol	ug/L	100	13.4J	13	1-181	
4-Bromophenylphenyl ether	ug/L	50	39.3	79	53-127	
4-Chloro-3-methylphenol	ug/L	100	65.5	66	22-147	
4-Chlorophenylphenyl ether	ug/L	50	37.9	76	25-158	
4-Nitrophenol	ug/L	250	10J	4	1-132	
Acenaphthene	ug/L	50	34.9	70	47-145	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

LABORATORY CONTROL SAMPLE: 2322395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthylene	ug/L	50	34.6	69	33-145	
Anthracene	ug/L	50	40.2	80	27-133	
Benzidine	ug/L	100	22.7J	23	25-150	L2
Benzo(a)anthracene	ug/L	50	33.3	67	33-143	
Benzo(a)pyrene	ug/L	50	32.1	64	17-163	
Benzo(b)fluoranthene	ug/L	50	30.3	61	24-159	
Benzo(g,h,i)perylene	ug/L	50	38.4	77	1-219	
Benzo(k)fluoranthene	ug/L	50	32.1	64	11-162	
bis(2-Chloroethoxy)methane	ug/L	50	38.6	77	33-184	
bis(2-Chloroethyl) ether	ug/L	50	37.5	75	12-158	
bis(2-Ethylhexyl)phthalate	ug/L	50	33.0	66	8-158	
Butylbenzylphthalate	ug/L	50	35.5	71	1-152	
Chrysene	ug/L	50	37.5	75	17-168	
Di-n-butylphthalate	ug/L	50	35.5	71	1-120	
Di-n-octylphthalate	ug/L	50	30.9	62	4-146	
Dibenz(a,h)anthracene	ug/L	50	38.5	77	1-227	
Diethylphthalate	ug/L	50	35.4	71	1-120	
Dimethylphthalate	ug/L	50	35.2	70	1-120	
Fluoranthene	ug/L	50	39.4	79	26-137	
Fluorene	ug/L	50	38.0	76	59-121	
Hexachloro-1,3-butadiene	ug/L	50	19.1	38	24-120	
Hexachlorobenzene	ug/L	50	39.8	80	1-152	
Hexachlorocyclopentadiene	ug/L	50	17.6	35	25-150	
Hexachloroethane	ug/L	50	18.1	36	40-120	L2
Indeno(1,2,3-cd)pyrene	ug/L	50	39.1	78	1-171	
Isophorone	ug/L	50	32.3	65	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	34.8	70	1-230	
N-Nitrosodimethylamine	ug/L	50	25.8	52	25-150	
N-Nitrosodiphenylamine	ug/L	50	39.2	78	25-150	
Naphthalene	ug/L	50	29.6	59	21-133	
Nitrobenzene	ug/L	50	36.0	72	35-180	
Pentachlorophenol	ug/L	100	14.3	14	14-176	
Phenanthrene	ug/L	50	39.8	80	54-120	
Phenol	ug/L	50	14.2	28	5-120	
Pyrene	ug/L	50	47.1	94	52-120	
2,4,6-Tribromophenol (S)	%			36	10-137	
2-Fluorobiphenyl (S)	%			69	15-120	
2-Fluorophenol (S)	%			20	10-120	
Nitrobenzene-d5 (S)	%			74	10-120	
Phenol-d6 (S)	%			24	10-120	
Terphenyl-d14 (S)	%			83	11-131	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE SAMPLE: 2322396

Parameter	Units	92391643001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	48.1	29.8	62	25-150	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	48.1	26.4	55	36-166	
2,4,6-Trichlorophenol	ug/L	ND	48.1	34.8	72	37-144	
2,4-Dichlorophenol	ug/L	ND	48.1	29.8	62	39-135	
2,4-Dimethylphenol	ug/L	ND	48.1	27.1	56	32-120	
2,4-Dinitrophenol	ug/L	ND	240	141	59	1-191	
2,4-Dinitrotoluene	ug/L	ND	48.1	35.7	74	39-139	
2,6-Dinitrotoluene	ug/L	ND	48.1	37.6	78	50-158	
2-Chloronaphthalene	ug/L	ND	48.1	25.3	53	60-120	M1
2-Chlorophenol	ug/L	ND	48.1	26.4	55	23-134	
2-Methylnaphthalene	ug/L	ND	48.1	26.3	55	25-150	
2-Nitrophenol	ug/L	ND	48.1	36.0	75	29-182	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	48.1	18.5	39	25-150	N2
3,3'-Dichlorobenzidine	ug/L	ND	96.2	55.2	57	1-262	
4,6-Dinitro-2-methylphenol	ug/L	ND	96.2	73.2	76	1-181	
4-Bromophenylphenyl ether	ug/L	ND	48.1	34.8	72	53-127	
4-Chloro-3-methylphenol	ug/L	ND	96.2	60.1	62	22-147	
4-Chlorophenylphenyl ether	ug/L	ND	48.1	33.4	69	25-158	
4-Nitrophenol	ug/L	ND	240	57.7	24	1-132	
Acenaphthene	ug/L	ND	48.1	29.8	62	47-145	
Acenaphthylene	ug/L	ND	48.1	29.0	60	33-145	
Anthracene	ug/L	ND	48.1	35.7	74	27-133	
Benzidine	ug/L	ND	96.2	ND	4	25-150	M0
Benzo(a)anthracene	ug/L	ND	48.1	31.2	65	33-143	
Benzo(a)pyrene	ug/L	ND	48.1	32.2	67	17-163	
Benzo(b)fluoranthene	ug/L	ND	48.1	30.1	63	24-159	
Benzo(g,h,i)perylene	ug/L	ND	48.1	39.0	81	1-219	
Benzo(k)fluoranthene	ug/L	ND	48.1	30.5	63	11-162	
bis(2-Chloroethoxy)methane	ug/L	ND	48.1	31.4	65	33-184	
bis(2-Chloroethyl) ether	ug/L	ND	48.1	29.8	62	12-158	
bis(2-Ethylhexyl)phthalate	ug/L	ND	48.1	30.2	63	8-158	
Butylbenzylphthalate	ug/L	ND	48.1	31.7	66	1-152	
Chrysene	ug/L	ND	48.1	32.0	67	17-168	
Di-n-butylphthalate	ug/L	ND	48.1	32.2	67	1-120	
Di-n-octylphthalate	ug/L	ND	48.1	33.5	70	4-146	
Dibenz(a,h)anthracene	ug/L	ND	48.1	39.4	82	1-227	
Diethylphthalate	ug/L	ND	48.1	32.1	67	1-120	
Dimethylphthalate	ug/L	ND	48.1	31.2	65	1-120	
Fluoranthene	ug/L	ND	48.1	36.4	76	26-137	
Fluorene	ug/L	ND	48.1	33.2	69	59-121	
Hexachloro-1,3-butadiene	ug/L	ND	48.1	19.0	40	24-120	
Hexachlorobenzene	ug/L	ND	48.1	35.1	73	1-152	
Hexachlorocyclopentadiene	ug/L	ND	48.1	17.0	35	25-150	
Hexachloroethane	ug/L	ND	48.1	17.2	36	40-120	M0
Indeno(1,2,3-cd)pyrene	ug/L	ND	48.1	39.3	82	1-171	
Isophorone	ug/L	ND	48.1	26.5	55	21-196	
N-Nitroso-di-n-propylamine	ug/L	ND	48.1	26.8	56	1-230	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE SAMPLE: 2322396

Parameter	Units	92391643001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
N-Nitrosodimethylamine	ug/L	ND	48.1	21.3	44	25-150	
N-Nitrosodiphenylamine	ug/L	ND	48.1	33.8	70	25-150	
Naphthalene	ug/L	ND	48.1	25.0	52	21-133	
Nitrobenzene	ug/L	ND	48.1	28.8	60	35-180	
Pentachlorophenol	ug/L	ND	96.2	67.8	71	14-176	
Phenanthrene	ug/L	ND	48.1	34.8	72	54-120	
Phenol	ug/L	ND	48.1	12.0	25	5-120	
Pyrene	ug/L	ND	48.1	35.0	73	52-120	
2,4,6-Tribromophenol (S)	%				87	10-137	
2-Fluorobiphenyl (S)	%				60	15-120	
2-Fluorophenol (S)	%				35	10-120	
Nitrobenzene-d5 (S)	%				66	10-120	
Phenol-d6 (S)	%				22	10-120	
Terphenyl-d14 (S)	%				56	11-131	

SAMPLE DUPLICATE: 2322397

Parameter	Units	266958002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	ND		30	
2,4,6-Trichlorophenol	ug/L	ND	ND		30	
2,4-Dichlorophenol	ug/L	ND	ND		30	
2,4-Dimethylphenol	ug/L	ND	ND		30	
2,4-Dinitrophenol	ug/L	ND	ND		30	
2,4-Dinitrotoluene	ug/L	ND	ND		30	
2,6-Dinitrotoluene	ug/L	ND	ND		30	
2-Chloronaphthalene	ug/L	ND	ND		30	
2-Chlorophenol	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
2-Nitrophenol	ug/L	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	ND		30	N2
3,3'-Dichlorobenzidine	ug/L	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/L	ND	ND		30	
4-Bromophenylphenyl ether	ug/L	ND	ND		30	
4-Chloro-3-methylphenol	ug/L	ND	ND		30	
4-Chlorophenylphenyl ether	ug/L	ND	ND		30	
4-Nitrophenol	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzidine	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

SAMPLE DUPLICATE: 2322397

Parameter	Units	266958002 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzo(k)fluoranthene	ug/L	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/L	ND	ND		30	
bis(2-Chloroethyl) ether	ug/L	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/L	ND	ND		30	
Butylbenzylphthalate	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Di-n-butylphthalate	ug/L	ND	ND		30	
Di-n-octylphthalate	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	
Diethylphthalate	ug/L	ND	ND		30	
Dimethylphthalate	ug/L	ND	ND		30	
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
Hexachlorobenzene	ug/L	ND	ND		30	
Hexachlorocyclopentadiene	ug/L	ND	ND		30	
Hexachloroethane	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Isophorone	ug/L	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/L	ND	ND		30	
N-Nitrosodimethylamine	ug/L	ND	ND		30	
N-Nitrosodiphenylamine	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
Nitrobenzene	ug/L	ND	ND		30	
Pentachlorophenol	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Phenol	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
2,4,6-Tribromophenol (S)	%	83	81	2		
2-Fluorobiphenyl (S)	%	55	62	11		
2-Fluorophenol (S)	%	29	29	0		
Nitrobenzene-d5 (S)	%	58	61	6		
Phenol-d6 (S)	%	19	19	3		
Terphenyl-d14 (S)	%	62	46	30		

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419189 | Analysis Method: EPA 625.1
QC Batch Method: EPA 625.1 | Analysis Description: 625 MSS
Associated Lab Samples: 92391708003

METHOD BLANK: 2323828 | Matrix: Water
Associated Lab Samples: 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	5.0	0.90	07/18/18 14:54	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	5.0	0.95	07/18/18 14:54	
2,4,6-Trichlorophenol	ug/L	ND	10.0	1.3	07/18/18 14:54	
2,4-Dichlorophenol	ug/L	ND	5.0	1.7	07/18/18 14:54	
2,4-Dimethylphenol	ug/L	ND	10.0	1.2	07/18/18 14:54	
2,4-Dinitrophenol	ug/L	ND	50.0	9.0	07/18/18 14:54	
2,4-Dinitrotoluene	ug/L	ND	5.0	0.90	07/18/18 14:54	
2,6-Dinitrotoluene	ug/L	ND	5.0	0.98	07/18/18 14:54	
2-Chloronaphthalene	ug/L	ND	5.0	0.98	07/18/18 14:54	
2-Chlorophenol	ug/L	ND	5.0	1.3	07/18/18 14:54	
2-Methylnaphthalene	ug/L	ND	5.0	0.28	07/18/18 14:54	
2-Nitrophenol	ug/L	ND	5.0	0.91	07/18/18 14:54	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	10.0	2.0	07/18/18 14:54	N2
3,3'-Dichlorobenzidine	ug/L	2.4J	25.0	2.1	07/18/18 14:54	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	2.6	07/18/18 14:54	
4-Bromophenylphenyl ether	ug/L	ND	5.0	0.82	07/18/18 14:54	
4-Chloro-3-methylphenol	ug/L	ND	5.0	3.7	07/18/18 14:54	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	0.87	07/18/18 14:54	
4-Nitrophenol	ug/L	ND	50.0	4.1	07/18/18 14:54	
Acenaphthene	ug/L	ND	5.0	0.25	07/18/18 14:54	
Acenaphthylene	ug/L	ND	5.0	0.21	07/18/18 14:54	
Anthracene	ug/L	ND	5.0	0.14	07/18/18 14:54	
Benzidine	ug/L	ND	50.0	5.1	07/18/18 14:54	
Benzo(a)anthracene	ug/L	2.6J	5.0	0.33	07/18/18 14:54	
Benzo(a)pyrene	ug/L	1.8J	5.0	0.30	07/18/18 14:54	
Benzo(b)fluoranthene	ug/L	2.1J	5.0	0.28	07/18/18 14:54	
Benzo(g,h,i)perylene	ug/L	ND	5.0	0.38	07/18/18 14:54	
Benzo(k)fluoranthene	ug/L	2.7J	5.0	0.43	07/18/18 14:54	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	0.92	07/18/18 14:54	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	1.0	07/18/18 14:54	
bis(2-Ethylhexyl)phthalate	ug/L	2.4J	5.0	0.79	07/18/18 14:54	
Butylbenzylphthalate	ug/L	1.1J	5.0	0.79	07/18/18 14:54	
Chrysene	ug/L	3.2J	5.0	0.21	07/18/18 14:54	
Di-n-butylphthalate	ug/L	ND	5.0	0.75	07/18/18 14:54	
Di-n-octylphthalate	ug/L	ND	5.0	0.66	07/18/18 14:54	
Dibenz(a,h)anthracene	ug/L	ND	5.0	0.55	07/18/18 14:54	
Diethylphthalate	ug/L	ND	5.0	0.58	07/18/18 14:54	
Dimethylphthalate	ug/L	ND	5.0	0.76	07/18/18 14:54	
Fluoranthene	ug/L	ND	5.0	0.21	07/18/18 14:54	
Fluorene	ug/L	ND	5.0	0.21	07/18/18 14:54	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	0.94	07/18/18 14:54	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

METHOD BLANK: 2323828 Matrix: Water
Associated Lab Samples: 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Hexachlorobenzene	ug/L	ND	5.0	0.72	07/18/18 14:54	
Hexachlorocyclopentadiene	ug/L	ND	10.0	0.88	07/18/18 14:54	
Hexachloroethane	ug/L	ND	5.0	1.1	07/18/18 14:54	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	0.29	07/18/18 14:54	
Isophorone	ug/L	ND	10.0	0.89	07/18/18 14:54	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	0.99	07/18/18 14:54	
N-Nitrosodimethylamine	ug/L	ND	5.0	0.91	07/18/18 14:54	
N-Nitrosodiphenylamine	ug/L	ND	10.0	1.0	07/18/18 14:54	
Naphthalene	ug/L	ND	5.0	0.34	07/18/18 14:54	
Nitrobenzene	ug/L	ND	5.0	1.1	07/18/18 14:54	
Pentachlorophenol	ug/L	ND	10.0	4.6	07/18/18 14:54	
Phenanthrene	ug/L	ND	5.0	0.22	07/18/18 14:54	
Phenol	ug/L	ND	5.0	1.9	07/18/18 14:54	
Pyrene	ug/L	ND	5.0	0.19	07/18/18 14:54	
2,4,6-Tribromophenol (S)	%	68	10-137		07/18/18 14:54	
2-Fluorobiphenyl (S)	%	60	15-120		07/18/18 14:54	
2-Fluorophenol (S)	%	32	10-120		07/18/18 14:54	
Nitrobenzene-d5 (S)	%	66	10-120		07/18/18 14:54	
Phenol-d6 (S)	%	20	10-120		07/18/18 14:54	
Terphenyl-d14 (S)	%	72	11-131		07/18/18 14:54	

LABORATORY CONTROL SAMPLE: 2323829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Diphenylhydrazine	ug/L	50	33.0	66	25-150	
2,2'-Oxybis(1-chloropropane)	ug/L	50	31.0	62	36-166	
2,4,6-Trichlorophenol	ug/L	50	34.9	70	37-144	
2,4-Dichlorophenol	ug/L	50	31.0	62	39-135	
2,4-Dimethylphenol	ug/L	50	27.9	56	32-120	
2,4-Dinitrophenol	ug/L	250	179	72	1-191	
2,4-Dinitrotoluene	ug/L	50	41.8	84	39-139	
2,6-Dinitrotoluene	ug/L	50	41.1	82	50-158	
2-Chloronaphthalene	ug/L	50	32.5	65	60-120	
2-Chlorophenol	ug/L	50	26.8	54	23-134	
2-Methylnaphthalene	ug/L	50	34.4	69	25-150	
2-Nitrophenol	ug/L	50	37.8	76	29-181	
3&4-Methylphenol(m&p Cresol)	ug/L	50	20.7	41	25-150	N2
3,3'-Dichlorobenzidine	ug/L	100	61.1	61	1-262	
4,6-Dinitro-2-methylphenol	ug/L	100	85.6	86	1-181	
4-Bromophenylphenyl ether	ug/L	50	38.4	77	53-127	
4-Chloro-3-methylphenol	ug/L	100	57.7	58	22-147	
4-Chlorophenylphenyl ether	ug/L	50	38.8	78	25-158	
4-Nitrophenol	ug/L	250	53.5	21	1-132	
Acenaphthene	ug/L	50	36.5	73	47-145	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

LABORATORY CONTROL SAMPLE: 2323829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthylene	ug/L	50	36.0	72	33-145	
Anthracene	ug/L	50	38.1	76	27-133	
Benzidine	ug/L	100	ND	3	25-150	L2
Benzo(a)anthracene	ug/L	50	32.2	64	33-143	
Benzo(a)pyrene	ug/L	50	40.1	80	17-163	
Benzo(b)fluoranthene	ug/L	50	38.1	76	24-159	
Benzo(g,h,i)perylene	ug/L	50	46.2	92	1-219	
Benzo(k)fluoranthene	ug/L	50	38.8	78	11-162	
bis(2-Chloroethoxy)methane	ug/L	50	37.6	75	33-184	
bis(2-Chloroethyl) ether	ug/L	50	37.7	75	12-158	
bis(2-Ethylhexyl)phthalate	ug/L	50	31.6	63	8-158	
Butylbenzylphthalate	ug/L	50	31.2	62	1-152	
Chrysene	ug/L	50	32.9	66	17-168	
Di-n-butylphthalate	ug/L	50	34.8	70	1-120	
Di-n-octylphthalate	ug/L	50	35.0	70	4-146	
Dibenz(a,h)anthracene	ug/L	50	46.9	94	1-227	
Diethylphthalate	ug/L	50	35.3	71	1-120	
Dimethylphthalate	ug/L	50	32.9	66	1-120	
Fluoranthene	ug/L	50	38.2	76	26-137	
Fluorene	ug/L	50	38.2	76	59-121	
Hexachloro-1,3-butadiene	ug/L	50	23.1	46	24-120	
Hexachlorobenzene	ug/L	50	38.0	76	1-152	
Hexachlorocyclopentadiene	ug/L	50	25.8	52	25-150	
Hexachloroethane	ug/L	50	21.6	43	40-120	
Indeno(1,2,3-cd)pyrene	ug/L	50	46.1	92	1-171	
Isophorone	ug/L	50	32.8	66	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	34.9	70	1-230	
N-Nitrosodimethylamine	ug/L	50	23.9	48	25-150	
N-Nitrosodiphenylamine	ug/L	50	36.2	72	25-150	
Naphthalene	ug/L	50	31.2	62	21-133	
Nitrobenzene	ug/L	50	34.9	70	35-180	
Pentachlorophenol	ug/L	100	60.7	61	14-176	
Phenanthrene	ug/L	50	37.0	74	54-120	
Phenol	ug/L	50	13.3	27	5-120	
Pyrene	ug/L	50	37.9	76	52-120	
2,4,6-Tribromophenol (S)	%			84	10-137	
2-Fluorobiphenyl (S)	%			68	15-120	
2-Fluorophenol (S)	%			34	10-120	
Nitrobenzene-d5 (S)	%			73	10-120	
Phenol-d6 (S)	%			24	10-120	
Terphenyl-d14 (S)	%			59	11-131	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE SAMPLE: 2323830

Parameter	Units	266987001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	49	31.3	64	25-150	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	49	26.3	54	36-166	
2,4,6-Trichlorophenol	ug/L	ND	49	38.5	78	37-144	
2,4-Dichlorophenol	ug/L	ND	49	34.2	70	39-135	
2,4-Dimethylphenol	ug/L	ND	49	28.7	59	32-120	
2,4-Dinitrophenol	ug/L	ND	245	ND	2	1-191	
2,4-Dinitrotoluene	ug/L	ND	49	38.4	78	39-139	
2,6-Dinitrotoluene	ug/L	ND	49	39.5	81	50-158	
2-Chloronaphthalene	ug/L	ND	49	31.2	64	60-120	
2-Chlorophenol	ug/L	ND	49	27.2	56	23-134	
2-Methylnaphthalene	ug/L	ND	49	33.6	69	25-150	
2-Nitrophenol	ug/L	ND	49	41.6	85	29-182	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	49	21.4	44	25-150	N2
3,3'-Dichlorobenzidine	ug/L	ND	98	33.9	33	1-262	
4,6-Dinitro-2-methylphenol	ug/L	ND	98	37.8	39	1-181	
4-Bromophenylphenyl ether	ug/L	ND	49	36.5	74	53-127	
4-Chloro-3-methylphenol	ug/L	ND	98	64.7	66	22-147	
4-Chlorophenylphenyl ether	ug/L	ND	49	36.8	75	25-158	
4-Nitrophenol	ug/L	ND	245	45.4J	19	1-132	
Acenaphthene	ug/L	ND	49	33.9	69	47-145	
Acenaphthylene	ug/L	ND	49	33.6	69	33-145	
Anthracene	ug/L	ND	49	35.5	72	27-133	
Benzidine	ug/L	ND	98	7.1J	7	25-150	M0
Benzo(a)anthracene	ug/L	ND	49	31.4	61	33-143	
Benzo(a)pyrene	ug/L	ND	49	35.2	68	17-163	
Benzo(b)fluoranthene	ug/L	ND	49	35.0	66	24-159	
Benzo(g,h,i)perylene	ug/L	ND	49	45.1	92	1-219	
Benzo(k)fluoranthene	ug/L	ND	49	34.7	66	11-162	
bis(2-Chloroethoxy)methane	ug/L	ND	49	34.2	70	33-184	
bis(2-Chloroethyl) ether	ug/L	ND	49	32.2	66	12-158	
bis(2-Ethylhexyl)phthalate	ug/L	ND	49	32.7	63	8-158	
Butylbenzylphthalate	ug/L	ND	49	32.3	66	1-152	
Chrysene	ug/L	ND	49	32.1	62	17-168	
Di-n-butylphthalate	ug/L	ND	49	34.1	69	1-120	
Di-n-octylphthalate	ug/L	ND	49	38.6	73	4-146	
Dibenz(a,h)anthracene	ug/L	ND	49	46.1	94	1-227	
Diethylphthalate	ug/L	ND	49	33.0	67	1-120	
Dimethylphthalate	ug/L	ND	49	32.9	67	1-120	
Fluoranthene	ug/L	ND	49	37.3	76	26-137	
Fluorene	ug/L	ND	49	36.5	74	59-121	
Hexachloro-1,3-butadiene	ug/L	ND	49	23.2	47	24-120	
Hexachlorobenzene	ug/L	ND	49	37.1	76	1-152	
Hexachlorocyclopentadiene	ug/L	ND	49	26.7	54	25-150	
Hexachloroethane	ug/L	ND	49	17.8	36	40-120	M1
Indeno(1,2,3-cd)pyrene	ug/L	ND	49	45.1	92	1-171	
Isophorone	ug/L	ND	49	29.1	59	21-196	
N-Nitroso-di-n-propylamine	ug/L	ND	49	30.5	62	1-230	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

MATRIX SPIKE SAMPLE: 2323830

Parameter	Units	266987001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
N-Nitrosodimethylamine	ug/L	ND	49	20.7	42	25-150	
N-Nitrosodiphenylamine	ug/L	ND	49	32.1	66	25-150	
Naphthalene	ug/L	ND	49	28.6	58	21-133	
Nitrobenzene	ug/L	ND	49	33.9	69	35-180	
Pentachlorophenol	ug/L	ND	98	57.8	59	14-176	
Phenanthrene	ug/L	ND	49	35.8	73	54-120	
Phenol	ug/L	ND	49	12.3	25	5-120	
Pyrene	ug/L	ND	49	37.2	76	52-120	
2,4,6-Tribromophenol (S)	%				89	10-137	
2-Fluorobiphenyl (S)	%				64	15-120	
2-Fluorophenol (S)	%				30	10-120	
Nitrobenzene-d5 (S)	%				66	10-120	
Phenol-d6 (S)	%				22	10-120	
Terphenyl-d14 (S)	%				45	11-131	

SAMPLE DUPLICATE: 2323831

Parameter	Units	92391882003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Diphenylhydrazine	ug/L	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	ND		30	
2,4,6-Trichlorophenol	ug/L	ND	ND		30	
2,4-Dichlorophenol	ug/L	ND	ND		30	
2,4-Dimethylphenol	ug/L	ND	ND		30	
2,4-Dinitrophenol	ug/L	ND	ND		30	
2,4-Dinitrotoluene	ug/L	ND	ND		30	
2,6-Dinitrotoluene	ug/L	ND	ND		30	
2-Chloronaphthalene	ug/L	ND	ND		30	
2-Chlorophenol	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
2-Nitrophenol	ug/L	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	ND		30	N2
3,3'-Dichlorobenzidine	ug/L	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/L	ND	ND		30	
4-Bromophenylphenyl ether	ug/L	ND	ND		30	
4-Chloro-3-methylphenol	ug/L	ND	ND		30	
4-Chlorophenylphenyl ether	ug/L	ND	ND		30	
4-Nitrophenol	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzidine	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

SAMPLE DUPLICATE: 2323831

Parameter	Units	92391882003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzo(k)fluoranthene	ug/L	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/L	ND	ND		30	
bis(2-Chloroethyl) ether	ug/L	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/L	ND	0.99J		30	
Butylbenzylphthalate	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Di-n-butylphthalate	ug/L	ND	ND		30	
Di-n-octylphthalate	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	
Diethylphthalate	ug/L	ND	ND		30	
Dimethylphthalate	ug/L	ND	ND		30	
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
Hexachlorobenzene	ug/L	ND	ND		30	
Hexachlorocyclopentadiene	ug/L	ND	ND		30	
Hexachloroethane	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Isophorone	ug/L	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/L	ND	ND		30	
N-Nitrosodimethylamine	ug/L	ND	ND		30	
N-Nitrosodiphenylamine	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
Nitrobenzene	ug/L	ND	ND		30	
Pentachlorophenol	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Phenol	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
2,4,6-Tribromophenol (S)	%	81	82	1		
2-Fluorobiphenyl (S)	%	41	36	14		
2-Fluorophenol (S)	%	21	20	4		
Nitrobenzene-d5 (S)	%	43	39	8		
Phenol-d6 (S)	%	13	13	3		
Terphenyl-d14 (S)	%	63	67	7		

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419703 | Analysis Method: EPA 420.4 Rev 1.0 1993
QC Batch Method: EPA 420.4 Rev 1.0 1993 | Analysis Description: 420.4 Phenolics
Associated Lab Samples: 92391708001, 92391708002, 92391708003

METHOD BLANK: 2325846 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002, 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Phenol	mg/L	0.0057J	0.010	0.0050	07/19/18 12:30	B0

LABORATORY CONTROL SAMPLE: 2325847

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol	mg/L	.05	0.049	98	90-110	B0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2325848 2325849

Parameter	Units	92391311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phenol	mg/L	ND	.05	.05	0.055	0.055	98	100	90-110	1	10	B0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2325850 2325851

Parameter	Units	92391455002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phenol	mg/L	0.014	.05	.05	0.061	0.059	93	90	90-110	2	10	B0

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 419424 | Analysis Method: SM 4500-CN-E-2011
QC Batch Method: SM 4500-CN-E-2011 | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92391708001, 92391708002

METHOD BLANK: 2324540 | Matrix: Water
Associated Lab Samples: 92391708001, 92391708002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	0.0040	07/17/18 14:50	

LABORATORY CONTROL SAMPLE: 2324541

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324542 2324543

Parameter	Units	92391056001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.094	0.090	94	90	80-120	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324544 2324545

Parameter	Units	92391398002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.096	0.095	96	95	80-120	2	10	

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QUALITY CONTROL DATA

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

QC Batch: 420558 | Analysis Method: SM 4500-CN-E-2011
QC Batch Method: SM 4500-CN-E-2011 | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92391708003

METHOD BLANK: 2329792 | Matrix: Water
Associated Lab Samples: 92391708003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	0.0040	07/25/18 05:56	

LABORATORY CONTROL SAMPLE: 2329793

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2329794 2329795

Parameter	Units	92391708003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.10	0.096	98	94	80-120	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2329796 2329797

Parameter	Units	92391513003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.071	0.061	69	60	80-120	15	10	M1,R1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
B0	Analyte was detected in an associated blank at a concentration greater than the MDL.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
R1	RPD value was outside control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
c2	Acid preservation may not be appropriate for the analysis of 2-Chloroethylvinyl ether.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Little Mountain Creek SW PPL
Pace Project No.: 92391708

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92391708001	**ABL-SW008-F005**	EPA 608.3	419893	EPA 608.3	420049
92391708002	**ABL-SW008-D005**	EPA 608.3	419893	EPA 608.3	420049
92391708003	**ABL-SW012-F005**	EPA 608.3	419893	EPA 608.3	420049
92391708001	**ABL-SW008-F005**	EPA 200.7 Rev 4.4 1994	418969	EPA 200.7 Rev 4.4 1994	419046
92391708002	**ABL-SW008-D005**	EPA 200.7 Rev 4.4 1994	418969	EPA 200.7 Rev 4.4 1994	419046
92391708003	**ABL-SW012-F005**	EPA 200.7 Rev 4.4 1994	418969	EPA 200.7 Rev 4.4 1994	419046
92391708001	**ABL-SW008-F005**	EPA 245.1 Rev 3.0 1994	419061	EPA 245.1 Rev 3.0 1994	419119
92391708002	**ABL-SW008-D005**	EPA 245.1 Rev 3.0 1994	419061	EPA 245.1 Rev 3.0 1994	419119
92391708003	**ABL-SW012-F005**	EPA 245.1 Rev 3.0 1994	419061	EPA 245.1 Rev 3.0 1994	419119
92391708001	**ABL-SW008-F005**	EPA 625.1	418950	EPA 625.1	419086
92391708002	**ABL-SW008-D005**	EPA 625.1	418950	EPA 625.1	419086
92391708003	**ABL-SW012-F005**	EPA 625.1	419189	EPA 625.1	419796
92391708001	**ABL-SW008-F005**	EPA 624	419109		
92391708002	**ABL-SW008-D005**	EPA 624	419109		
92391708003	**ABL-SW012-F005**	EPA 624	419109		
92391708004	**ABL-TB001-F005**	EPA 624	419109		
92391708001	**ABL-SW008-F005**	EPA 420.4 Rev 1.0 1993	419703		
92391708002	**ABL-SW008-D005**	EPA 420.4 Rev 1.0 1993	419703		
92391708003	**ABL-SW012-F005**	EPA 420.4 Rev 1.0 1993	419703		
92391708001	**ABL-SW008-F005**	SM 4500-CN-E-2011	419424		
92391708002	**ABL-SW008-D005**	SM 4500-CN-E-2011	419424		
92391708003	**ABL-SW012-F005**	SM 4500-CN-E-2011	420558		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐

Sample Condition Upon Receipt

Client Name: Environeering

Project #: WO#:92391708

92391708

Courier: ☐ Commercial ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Pace ☑ Other:____

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: LD 7-12-18

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T040

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 3.8 – 3.3 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 4.2 – 3.7

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on Ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☑ No	☐ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: UCP **Date:** aep 07/12/18

Project Manager SRF Review: NMG **Date:** 7/12/18

Pace Analytical®	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO#:92391708

PM: NMG Due Date: 07/26/18

CLIENT: 92-Alcoa

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1				1		1 ✓		1 ✓		4				1 ✓		3										2		
2				1		1 ✓		1 ✓		4				1 ✓		3										2		
3				1		1 ✓		1 ✓		4				1 ✓		3										2		
4																2												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, Incorrect preservative, out of temp, Incorrect containers.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Environeering
Address:	138 Fort Jackson Road
	Morrisville, NC 27560
Email:	M.WORDEN
Phone:	832-674-8802 Fax
Requested Due Date:	STD

Section B
Required Project Information:

Report To:	Michael Worden
Copy To:	
Purchase Order #:	
Project Name:	Little Mountain Creek - SW - PPL
Project #:	137-203

Section C
Invoice Information:

Attention:	
Company Name:	ENVIRONEERING
Address:	HOUSTON TX
Pace Quote:	
Pace Project Manager:	nicole.gasiorowski@pacelabs.com,
Pace Profile #:	7478

Regulatory Agency	
State / Location	NC

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): PPL VOCs (624)	PPL SVOCs (625)	PPL Metals (200.7/245.1)	Cyanide (4500 CN E)	Phenols (420.4)	Asbestos (100.2)	2,3,7,8-TCDD (1613)	PPL Pest/PCBs (608)	Trip Blank (624)	Residual Chlorine (Y/N)	912391708
1	ABL-SW008-F005	WT	G	—	—	7/12	710		12		X	X	X	X			X		X	X	X	X	X	X	X	X			MISSING 1 VOA - 001
2	ABL-SW008-D005	WT	G	—	—	7/12	730		13		X	X	X	X			X		X	X	X	X	X	X	X	X			CRACKED ON ARRIVAL 002
3	ABL-SW012-F005	WT	G	—	—	7/12	955		13		X	X	X	X			X		X	X	X	X	X	X	X	X			003
4	ABL-TB001-F005	WT	G	—	—	7/12	—		2				X														X		004
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Environeering	7/12/18	1115	Environeering	7/12/18	1115
	Environeering	7/12/18	1230	Brook Stewart/Pace	7/12/18	1230

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4.2 3.7	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MICHAEL WORDEN

SIGNATURE of SAMPLER: [signature] DATE Signed: 7/12/18

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Nicole Gasiorowski
PACE Charlotte
9800 Kincey Ave.
Huntersville NC 28078

REPORT OF LABORATORY ANALYSIS FOR TCDD

Report Information:

Pace Project #: 10439455
Sample Receipt Date: 07/13/2018
Client Project #: 92391708
Client Sub PO #: N/A
State Cert #: 27700

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 2,3,7,8-TCDD Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:

July 25, 2018
Nathan Boberg, Project Manager

(612) 607-6444 (fax)
nathan.boberg@pacelabs.com

Report Prepared Date:
July 25, 2018

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
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DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of Pace Charlotte. The samples were analyzed for the presence or absence of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) using USEPA Method 1613B. The reporting limits were set to correspond to the lowest calibration point and a nominal 1-Liter sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled TCDD internal standard in the sample extracts ranged from 55-74%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native TCDD was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of 2,3,7,8-TCDD at the reporting limits.

Laboratory spike samples were also prepared using clean reference matrix that had been fortified with native standard material. The results show that the spiked native TCDD was recovered at 104-111% with a relative percent difference of 6.5%. These results were within the target ranges for the method. Matrix spikes were not prepared with the sample batch.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

Chain of Custody

WO#: 10439455

10439455

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NC

Workorder: 92391708 **Workorder Name:** Little Mountain Creek SW PPL **Owner Received Date:** 7/12/2018 **Results Requested By:** 7/26/2018

Report To

Nicole Gasiorowski
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Subcontract To

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1613 - 2,3,7,8-TCDD	LAB USE ONLY
1	ABL-SW008-F005	PS	7/12/2018 07:10	92391708001	Water	2	X	001
2	ABL-SW008-D005	PS	7/12/2018 07:30	92391708002	Water	2	X	002
3	ABL-SW012-F005	PS	7/12/2018 09:55	92391708003	Water	2	X	003
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	7/12/18 1800	[illegible]	7/13/18 945
2				
3				

Comments

Cooler Temperature on Receipt 3 & 4.5°C **Custody Seal** Y or (N) **Received on Ice** (Y) or N **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Charlotte

Project #: **WO# : 10439455**

PM: NB3 Due Date: 07/20/18
CLIENT: PASI-CHRLT

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4394 2203 4060/4050

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.8, 4.5 **Cooler Temp Corrected (°C):** 3.8, 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** time **Date and Initials of Person Examining Contents:** CM 7/17/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nathan Boberg **Date:** 7/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW008-F005		
Lab Sample ID	92391708001		
Filename	F180724B_06		
Injected By	SMT		
Total Amount Extracted	1000 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018 07:10
ICAL ID	F180405	Received	07/13/2018 09:45
CCal Filename(s)	F180724A_17	Extracted	07/19/2018 13:00
Method Blank ID	BLANK-63557	Analyzed	07/24/2018 18:02

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	74
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	90

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW008-D005		
Lab Sample ID	92391708002		
Filename	U180725A_10		
Injected By	SMT		
Total Amount Extracted	1010 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018 07:30
ICAL ID	U180405	Received	07/13/2018 09:45
CCal Filename(s)	U180724A_19	Extracted	07/19/2018 13:00
Method Blank ID	BLANK-63557	Analyzed	07/25/2018 12:22

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	63
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	77

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW012-F005		
Lab Sample ID	92391708003		
Filename	U180725A_11		
Injected By	SMT		
Total Amount Extracted	957 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/12/2018 09:55
ICAL ID	U180405	Received	07/13/2018 09:45
CCal Filename(s)	U180724A_19	Extracted	07/19/2018 13:00
Method Blank ID	BLANK-63557	Analyzed	07/25/2018 13:06

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	55
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	78

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKTL		
Lab Sample ID	BLANK-63557	Matrix	Water
Filename	F180723B_05	Dilution	NA
Total Amount Extracted	1050 mL	Extracted	07/19/2018 13:00
ICAL ID	F180405	Analyzed	07/23/2018 16:20
CCal Filename(s)	F180723B_01	Injected By	SMT

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	59
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	66

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-63558		
Filename	F180723B_02	Matrix	Water
Total Amount Extracted	1050 mL	Dilution	NA
ICAL ID	F180405	Extracted	07/19/2018 13:00
CCal Filename	F180723B_01	Analyzed	07/23/2018 14:06
Method Blank ID	BLANK-63557	Injected By	SMT

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	10	7.3	14.6	104
2,3,7,8-TCDD-37Cl4	10	8.9	3.7	15.8	89
2,3,7,8-TCDD-13C	100	83	25.0	141.0	83

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCSD-63559		
Filename	F180723B_03	Matrix	Water
Total Amount Extracted	1010 mL	Dilution	NA
ICAL ID	F180405	Extracted	07/19/2018 13:00
CCal Filename	F180723B_01	Analyzed	07/23/2018 14:50
Method Blank ID	BLANK-63557	Injected By	SMT

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDD	10	11	7.3	14.6	111
2,3,7,8-TCDD-37Cl4	10	9.0	3.7	15.8	90
2,3,7,8-TCDD-13C	100	86	25.0	141.0	86

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63558	Spike 2 ID	LCSD-63559
Spike 1 Filename	F180723B_02	Spike 2 Filename	F180723B_03

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDD	104	111	6.5

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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EMSL Analytical, Inc.
2500 Gateway Centre Blvd., Suite 600 Morrisville, NC 27560
Phone/Fax: (919) 465-3900 / (919) 465-3950
http://www.EMSL.com / raleighlab@emsl.com

EMSL Order ID: 291805971
Customer ID: pace54
Customer PO:
Project ID:

Attn: Nicole Gasiorowski
Pace Analytical Services, LLC
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078

Phone: (704) 875-9092
Fax: (704) 875-9091
Collected: 07/12/2018
Received: 07/13/2018
Analyzed: 07/27/2018

Proj: 92391708/Little Mountain Creek SW PPL

Test Report: Determination of Asbestos Structures >10µm in Drinking Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm²)	Area Analyzed (mm²)	ASBESTOS Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
ABL-SW008-F005 291805971-0001	7/14/2018 09:12 AM	5	1263	0.2600	None Detected	ND	0.97	<0.97	0.00 - 3.60
ABL-SW008-D005 291805971-0002	7/14/2018 09:12 AM	20	1263	0.2600	None Detected	ND	0.24	<0.24	0.00 - 0.90
ABL-SW012-F005 291805971-0003	7/14/2018 09:12 AM	10	1263	0.2600	None Detected	ND	0.49	<0.49	0.00 - 1.80

Analyst(s)
Alicia Folgar (3)

Billy Barnes, Asbestos Lab Manager
or Other Approved Signatory

Any questions please contact Billy Barnes.

Initial report from: 07/27/2018 10:58:34

Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report relates only to the samples reported above. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Morrisville, NC

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

September 04, 2018

Michael W. Worden
Environeering, Inc.
16100 Cairnway
Suite 320
Houston, TX 77084

RE: Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Dear Michael Worden:
Enclosed are the analytical results for sample(s) received by the laboratory on July 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revision was issued on 8/20/18 to report updated 8270 with passing internal standards after several reanalyses.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project:	Eastern Drainage Ditch - Sed
Pace Project No.:	92391608

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92391608001	**ABL-SD010-F005**	Solid	07/11/18 00:00	07/11/18 16:35
92391608002	**ABL-SD011-F005**	Solid	07/11/18 00:00	07/11/18 16:35
92391608003	**ABL-SD012-F005**	Solid	07/11/18 00:00	07/11/18 16:35
92391608004	**ABL-EB001-F005**	Water	07/11/18 00:00	07/11/18 16:35

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92391608001	**ABL-SD010-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92391608002	**ABL-SD011-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92391608003	**ABL-SD012-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	PKS	21	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92391608004	**ABL-EB001-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	RES	20	PASI-C

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Sample: ABL-SD010-F005 **Lab ID: 92391608001** Collected: 07/11/18 00:00 Received: 07/11/18 16:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 16:56	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	59	%	21-132		1	07/12/18 13:35	07/13/18 16:56	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	**3.5J**	ug/kg	14.8	2.2	1	07/12/18 16:10	08/11/18 03:09	83-32-9	
Acenaphthylene	ND	ug/kg	14.8	1.9	1	07/12/18 16:10	08/11/18 03:09	208-96-8	
Anthracene	**7.4J**	ug/kg	14.8	2.1	1	07/12/18 16:10	08/11/18 03:09	120-12-7	
Benzo(a)anthracene	**40.0**	ug/kg	14.8	1.1	1	07/12/18 16:10	08/11/18 03:09	56-55-3	
Benzo(a)pyrene	**45.6**	ug/kg	14.8	1.6	1	07/12/18 16:10	08/11/18 03:09	50-32-8	
Benzo(b)fluoranthene	**41.9**	ug/kg	14.8	0.99	1	07/12/18 16:10	08/11/18 03:09	205-99-2	
Benzo(g,h,i)perylene	**23.0**	ug/kg	14.8	3.9	1	07/12/18 16:10	08/11/18 03:09	191-24-2	
Benzo(k)fluoranthene	**15.8**	ug/kg	14.8	2.2	1	07/12/18 16:10	08/11/18 03:09	207-08-9	
Chrysene	**37.2**	ug/kg	14.8	2.7	1	07/12/18 16:10	08/11/18 03:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	14.8	2.7	1	07/12/18 16:10	08/11/18 03:09	53-70-3	
Fluoranthene	**53.9**	ug/kg	14.8	1.2	1	07/12/18 16:10	08/11/18 03:09	206-44-0	
Fluorene	**2.8J**	ug/kg	14.8	2.4	1	07/12/18 16:10	08/11/18 03:09	86-73-7	
Indeno(1,2,3-cd)pyrene	**21.7**	ug/kg	14.8	4.2	1	07/12/18 16:10	08/11/18 03:09	193-39-5	
1-Methylnaphthalene	ND	ug/kg	14.8	1.8	1	07/12/18 16:10	08/11/18 03:09	90-12-0	
2-Methylnaphthalene	**2.3J**	ug/kg	14.8	1.6	1	07/12/18 16:10	08/11/18 03:09	91-57-6	B
Naphthalene	ND	ug/kg	14.8	3.4	1	07/12/18 16:10	08/11/18 03:09	91-20-3	
Phenanthrene	**29.5**	ug/kg	14.8	2.2	1	07/12/18 16:10	08/11/18 03:09	85-01-8	
Pyrene	**44.5**	ug/kg	14.8	2.7	1	07/12/18 16:10	08/11/18 03:09	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	55	%	10-128		1	07/12/18 16:10	08/11/18 03:09	4165-60-0	
2-Fluorobiphenyl (S)	43	%	10-110		1	07/12/18 16:10	08/11/18 03:09	321-60-8	
Terphenyl-d14 (S)	61	%	39-119		1	07/12/18 16:10	08/11/18 03:09	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**32.8**	%	0.10	0.10	1		07/13/18 11:49		

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Sample: ABL-SD011-F005 **Lab ID: 92391608002** Collected: 07/11/18 00:00 Received: 07/11/18 16:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	58.3	26.5	1	07/12/18 13:35	07/13/18 17:17	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	60	%	21-132		1	07/12/18 13:35	07/13/18 17:17	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	**26.2**	ug/kg	17.5	2.6	1	07/12/18 16:10	08/11/18 03:55	83-32-9	
Acenaphthylene	ND	ug/kg	17.5	2.3	1	07/12/18 16:10	08/11/18 03:55	208-96-8	
Anthracene	**56.3**	ug/kg	17.5	2.5	1	07/12/18 16:10	08/11/18 03:55	120-12-7	
Benzo(a)anthracene	**287**	ug/kg	17.5	1.2	1	07/12/18 16:10	08/11/18 03:55	56-55-3	
Benzo(a)pyrene	**319**	ug/kg	17.5	1.9	1	07/12/18 16:10	08/11/18 03:55	50-32-8	
Benzo(b)fluoranthene	**286**	ug/kg	17.5	1.2	1	07/12/18 16:10	08/11/18 03:55	205-99-2	
Benzo(g,h,i)perylene	**146**	ug/kg	17.5	4.6	1	07/12/18 16:10	08/11/18 03:55	191-24-2	
Benzo(k)fluoranthene	**109**	ug/kg	17.5	2.6	1	07/12/18 16:10	08/11/18 03:55	207-08-9	
Chrysene	**254**	ug/kg	17.5	3.2	1	07/12/18 16:10	08/11/18 03:55	218-01-9	
Dibenz(a,h)anthracene	**13.1J**	ug/kg	17.5	3.2	1	07/12/18 16:10	08/11/18 03:55	53-70-3	
Fluoranthene	**381**	ug/kg	17.5	1.5	1	07/12/18 16:10	08/11/18 03:55	206-44-0	
Fluorene	**21.5**	ug/kg	17.5	2.8	1	07/12/18 16:10	08/11/18 03:55	86-73-7	
Indeno(1,2,3-cd)pyrene	**137**	ug/kg	17.5	4.9	1	07/12/18 16:10	08/11/18 03:55	193-39-5	
1-Methylnaphthalene	**2.7J**	ug/kg	17.5	2.1	1	07/12/18 16:10	08/11/18 03:55	90-12-0	
2-Methylnaphthalene	**4.2J**	ug/kg	17.5	1.9	1	07/12/18 16:10	08/11/18 03:55	91-57-6	
Naphthalene	**5.9J**	ug/kg	17.5	4.0	1	07/12/18 16:10	08/11/18 03:55	91-20-3	
Phenanthrene	**235**	ug/kg	17.5	2.6	1	07/12/18 16:10	08/11/18 03:55	85-01-8	
Pyrene	**307**	ug/kg	17.5	3.2	1	07/12/18 16:10	08/11/18 03:55	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	52	%	10-128		1	07/12/18 16:10	08/11/18 03:55	4165-60-0	
2-Fluorobiphenyl (S)	35	%	10-110		1	07/12/18 16:10	08/11/18 03:55	321-60-8	
Terphenyl-d14 (S)	38	%	39-119		1	07/12/18 16:10	08/11/18 03:55	1718-51-0	S0
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**42.4**	%	0.10	0.10	1		07/13/18 11:49		

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Sample: ABL-SD012-F005 **Lab ID: 92391608003** Collected: 07/11/18 00:00 Received: 07/11/18 16:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	48.0	21.8	1	07/12/18 13:35	07/13/18 17:37	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	77	%	21-132		1	07/12/18 13:35	07/13/18 17:37	2051-24-3	
8270 MSSV MW PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3546								
Acenaphthene	ND	ug/kg	14.4	2.2	1	07/12/18 16:10	08/11/18 03:32	83-32-9	
Acenaphthylene	ND	ug/kg	14.4	1.9	1	07/12/18 16:10	08/11/18 03:32	208-96-8	
Anthracene	**3.6J**	ug/kg	14.4	2.0	1	07/12/18 16:10	08/11/18 03:32	120-12-7	
Benzo(a)anthracene	**17.1**	ug/kg	14.4	1.0	1	07/12/18 16:10	08/11/18 03:32	56-55-3	
Benzo(a)pyrene	**19.1**	ug/kg	14.4	1.6	1	07/12/18 16:10	08/11/18 03:32	50-32-8	
Benzo(b)fluoranthene	**17.6**	ug/kg	14.4	0.96	1	07/12/18 16:10	08/11/18 03:32	205-99-2	
Benzo(g,h,i)perylene	**10.0J**	ug/kg	14.4	3.7	1	07/12/18 16:10	08/11/18 03:32	191-24-2	
Benzo(k)fluoranthene	**8.0J**	ug/kg	14.4	2.2	1	07/12/18 16:10	08/11/18 03:32	207-08-9	
Chrysene	**16.2**	ug/kg	14.4	2.6	1	07/12/18 16:10	08/11/18 03:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	14.4	2.6	1	07/12/18 16:10	08/11/18 03:32	53-70-3	
Fluoranthene	**23.2**	ug/kg	14.4	1.2	1	07/12/18 16:10	08/11/18 03:32	206-44-0	
Fluorene	ND	ug/kg	14.4	2.3	1	07/12/18 16:10	08/11/18 03:32	86-73-7	
Indeno(1,2,3-cd)pyrene	**9.3J**	ug/kg	14.4	4.0	1	07/12/18 16:10	08/11/18 03:32	193-39-5	
1-Methylnaphthalene	ND	ug/kg	14.4	1.7	1	07/12/18 16:10	08/11/18 03:32	90-12-0	
2-Methylnaphthalene	ND	ug/kg	14.4	1.6	1	07/12/18 16:10	08/11/18 03:32	91-57-6	
Naphthalene	ND	ug/kg	14.4	3.3	1	07/12/18 16:10	08/11/18 03:32	91-20-3	
Phenanthrene	**14.0J**	ug/kg	14.4	2.2	1	07/12/18 16:10	08/11/18 03:32	85-01-8	
Pyrene	**18.1**	ug/kg	14.4	2.6	1	07/12/18 16:10	08/11/18 03:32	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	54	%	10-128		1	07/12/18 16:10	08/11/18 03:32	4165-60-0	
2-Fluorobiphenyl (S)	40	%	10-110		1	07/12/18 16:10	08/11/18 03:32	321-60-8	
Terphenyl-d14 (S)	59	%	39-119		1	07/12/18 16:10	08/11/18 03:32	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**31.2**	%	0.10	0.10	1		07/13/18 11:49		

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Sample: ABL-EB001-F005 **Lab ID: 92391608004** Collected: 07/11/18 00:00 Received: 07/11/18 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:05	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	32	%	10-132		1	07/12/18 19:40	07/16/18 19:05	2051-24-3	
8270 SPLP SIM PAH Low Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3511 Leachate Method/Date: EPA 1312; 07/19/18 10:52								
Acenaphthene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 16:31	83-32-9	
Acenaphthylene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 16:31	208-96-8	
Anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 16:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 16:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 16:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 16:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 16:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 16:31	207-08-9	
Chrysene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 16:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.15	0.15	1	07/20/18 07:40	07/20/18 16:31	53-70-3	
Fluoranthene	ND	ug/L	0.30	0.30	1	07/20/18 07:40	07/20/18 16:31	206-44-0	
Fluorene	ND	ug/L	0.31	0.31	1	07/20/18 07:40	07/20/18 16:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 16:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 16:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 16:31	91-57-6	
Naphthalene	ND	ug/L	1.5	1.5	1	07/20/18 07:40	07/20/18 16:31	91-20-3	
Phenanthrene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 16:31	85-01-8	
Pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 16:31	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	113	%	70-130		1	07/20/18 07:40	07/20/18 16:31	4165-60-0	
2-Fluorobiphenyl (S)	84	%	70-130		1	07/20/18 07:40	07/20/18 16:31	321-60-8	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

QC Batch: 418714 | Analysis Method: EPA 8082A
QC Batch Method: EPA 3510C | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92391608004

METHOD BLANK: 2321052 | Matrix: Water
Associated Lab Samples: 92391608004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	07/16/18 23:33	
Decachlorobiphenyl (S)	%	73	10-132		07/16/18 23:33	

LABORATORY CONTROL SAMPLE & LCSD: 2321053 2321054

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.6	3.4	72	68	50-150	6	30	
PCB-1260 (Aroclor 1260)	ug/L	5	4.0	3.7	80	74	50-150	9	30	
Decachlorobiphenyl (S)	%				76	81	10-132			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

QC Batch: 418842 | Analysis Method: EPA 8082A
QC Batch Method: EPA 3546 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92391608001, 92391608002, 92391608003

METHOD BLANK: 2321763 | Matrix: Solid
Associated Lab Samples: 92391608001, 92391608002, 92391608003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1221 (Aroclor 1221)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1232 (Aroclor 1232)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1242 (Aroclor 1242)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1248 (Aroclor 1248)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1254 (Aroclor 1254)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
PCB-1260 (Aroclor 1260)	ug/kg	ND	32.8	14.9	07/13/18 13:43	
Decachlorobiphenyl (S)	%	95	21-132		07/13/18 13:43	

LABORATORY CONTROL SAMPLE & LCSD: 2321764 2321765

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	131	147	79	88	31-120	11	30	
PCB-1260 (Aroclor 1260)	ug/kg	167	148	170	89	102	32-120	14	30	
Decachlorobiphenyl (S)	%				102	113	21-132			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

QC Batch: 418920 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3546 | Analysis Description: 8270 MSSV PAH by SIM
Associated Lab Samples: 92391608001, 92391608002, 92391608003

METHOD BLANK: 2322225 | Matrix: Solid
Associated Lab Samples: 92391608001, 92391608002, 92391608003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	9.9	1.2	07/17/18 10:36	
2-Methylnaphthalene	ug/kg	1.7J	9.9	1.1	07/17/18 10:36	
Acenaphthene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Acenaphthylene	ug/kg	ND	9.9	1.3	07/17/18 10:36	
Anthracene	ug/kg	ND	9.9	1.4	07/17/18 10:36	
Benzo(a)anthracene	ug/kg	ND	9.9	0.70	07/17/18 10:36	
Benzo(a)pyrene	ug/kg	ND	9.9	1.1	07/17/18 10:36	
Benzo(b)fluoranthene	ug/kg	ND	9.9	0.66	07/17/18 10:36	
Benzo(g,h,i)perylene	ug/kg	ND	9.9	2.6	07/17/18 10:36	
Benzo(k)fluoranthene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Chrysene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
Dibenz(a,h)anthracene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
Fluoranthene	ug/kg	ND	9.9	0.82	07/17/18 10:36	
Fluorene	ug/kg	ND	9.9	1.6	07/17/18 10:36	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	9.9	2.8	07/17/18 10:36	
Naphthalene	ug/kg	ND	9.9	2.3	07/17/18 10:36	
Phenanthrene	ug/kg	ND	9.9	1.5	07/17/18 10:36	
Pyrene	ug/kg	ND	9.9	1.8	07/17/18 10:36	
2-Fluorobiphenyl (S)	%	47	10-110		07/17/18 10:36	
Nitrobenzene-d5 (S)	%	53	10-128		07/17/18 10:36	
Terphenyl-d14 (S)	%	59	39-119		07/17/18 10:36	

LABORATORY CONTROL SAMPLE: 2322226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	33.8	19.4	57	44-130	
2-Methylnaphthalene	ug/kg	33.8	20.1	59	41-134	
Acenaphthene	ug/kg	33.8	20.0	59	52-123	
Acenaphthylene	ug/kg	33.8	18.4	55	49-116	
Anthracene	ug/kg	33.8	19.2	57	41-133	
Benzo(a)anthracene	ug/kg	33.8	19.5	58	56-130	
Benzo(a)pyrene	ug/kg	33.8	18.5	55	51-136	
Benzo(b)fluoranthene	ug/kg	33.8	17.8	53	37-149	
Benzo(g,h,i)perylene	ug/kg	33.8	17.1	51	39-127	
Benzo(k)fluoranthene	ug/kg	33.8	21.2	63	45-139	
Chrysene	ug/kg	33.8	20.2	60	59-127	
Dibenz(a,h)anthracene	ug/kg	33.8	18.1	54	37-139	
Fluoranthene	ug/kg	33.8	19.1	57	53-132	
Fluorene	ug/kg	33.8	18.8	56	45-127	
Indeno(1,2,3-cd)pyrene	ug/kg	33.8	18.9	56	35-145	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

LABORATORY CONTROL SAMPLE: 2322226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	33.8	20.2	60	45-123	
Phenanthrene	ug/kg	33.8	18.8	56	50-125	
Pyrene	ug/kg	33.8	18.9	56	52-132	
2-Fluorobiphenyl (S)	%			58	10-110	
Nitrobenzene-d5 (S)	%			66	10-128	
Terphenyl-d14 (S)	%			66	39-119	

MATRIX SPIKE SAMPLE: 2322227

Parameter	Units	35403561001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1.2U	33.3	11.2	33	50-150	M1
2-Methylnaphthalene	ug/kg	1.1U	33.3	11.5	34	50-150	M1
Acenaphthene	ug/kg	1.5U	33.3	11.5	35	50-150	M1
Acenaphthylene	ug/kg	1.3U	33.3	10.5	32	50-150	M1
Anthracene	ug/kg	1.4U	33.3	11.0	33	50-150	M1
Benzo(a)anthracene	ug/kg	0.72U	33.3	11.3	34	50-150	M1
Benzo(a)pyrene	ug/kg	1.1U	33.3	10.6	32	50-150	M1
Benzo(b)fluoranthene	ug/kg	0.68U	33.3	11.0	33	50-150	M1
Benzo(g,h,i)perylene	ug/kg	2.6U	33.3	9.2J	27	50-150	M1
Benzo(k)fluoranthene	ug/kg	1.5U	33.3	11.7	35	50-150	M1
Chrysene	ug/kg	1.8U	33.3	11.2	34	50-150	M1
Dibenz(a,h)anthracene	ug/kg	1.8U	33.3	9.7J	29	50-150	M1
Fluoranthene	ug/kg	0.84U	33.3	11.2	34	50-150	M1
Fluorene	ug/kg	1.6U	33.3	11.0	33	50-150	M1
Indeno(1,2,3-cd)pyrene	ug/kg	2.8U	33.3	10.3	31	50-150	M1
Naphthalene	ug/kg	2.3U	33.3	11.4	34	50-150	M1
Phenanthrene	ug/kg	1.5U	33.3	11.0	33	50-150	M1
Pyrene	ug/kg	1.8U	33.3	11.2	33	50-150	M1
2-Fluorobiphenyl (S)	%				32	10-110	
Nitrobenzene-d5 (S)	%				36	10-128	
Terphenyl-d14 (S)	%				35	39-119	S2

SAMPLE DUPLICATE: 2322228

Parameter	Units	35403557001 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/kg	161	157	3	30	IO
2-Methylnaphthalene	ug/kg	22.5J	25.3J		30	IO
Acenaphthene	ug/kg	63.0J	ND		30	IO
Acenaphthylene	ug/kg	14.3U	ND		30	IO
Anthracene	ug/kg	147	112	27	30	
Benzo(a)anthracene	ug/kg	7.8U	ND		30	IO
Benzo(a)pyrene	ug/kg	12.1U	ND		30	IO
Benzo(b)fluoranthene	ug/kg	7.4U	ND		30	IO
Benzo(g,h,i)perylene	ug/kg	28.5U	ND		30	IO

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

SAMPLE DUPLICATE: 2322228

Parameter	Units	35403557001 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzo(k)fluoranthene	ug/kg	16.5U	ND		30	IO
Chrysene	ug/kg	19.7U	ND		30	IO
Dibenz(a,h)anthracene	ug/kg	19.7U	ND		30	IO
Fluoranthene	ug/kg	92.1J	101J		30	IO
Fluorene	ug/kg	128	77.9J		30	IO
Indeno(1,2,3-cd)pyrene	ug/kg	30.7U	ND		30	IO
Naphthalene	ug/kg	95.7J	105J		30	IO
Phenanthrene	ug/kg	16.5U	ND		30	IO
Pyrene	ug/kg	255	283	10	30	IO
2-Fluorobiphenyl (S)	%	0	0			S4
Nitrobenzene-d5 (S)	%	0	0			D3,P3,S4
Terphenyl-d14 (S)	%	0	0			S4

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

QC Batch: 420210
QC Batch Method: EPA 3511
Analysis Method: EPA 8270D by SIM
Analysis Description: 8270 SPLP SIM PAH Low Volume
Associated Lab Samples: 92391608004

METHOD BLANK: 2328166
Matrix: Water
Associated Lab Samples: 92391608004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	2.0	2.0	07/20/18 15:49	
2-Methylnaphthalene	ug/L	ND	2.0	2.0	07/20/18 15:49	
Acenaphthene	ug/L	ND	0.50	0.50	07/20/18 15:49	
Acenaphthylene	ug/L	ND	0.50	0.50	07/20/18 15:49	
Anthracene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(a)anthracene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(a)pyrene	ug/L	ND	0.10	0.10	07/20/18 15:49	
Benzo(b)fluoranthene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(g,h,i)perylene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Benzo(k)fluoranthene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Chrysene	ug/L	ND	0.10	0.10	07/20/18 15:49	
Dibenz(a,h)anthracene	ug/L	ND	0.15	0.15	07/20/18 15:49	
Fluoranthene	ug/L	ND	0.30	0.30	07/20/18 15:49	
Fluorene	ug/L	ND	0.31	0.31	07/20/18 15:49	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Naphthalene	ug/L	ND	1.5	1.5	07/20/18 15:49	
Phenanthrene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Pyrene	ug/L	ND	0.10	0.10	07/20/18 15:49	
2-Fluorobiphenyl (S)	%	77	70-130		07/20/18 15:49	
Nitrobenzene-d5 (S)	%	94	70-130		07/20/18 15:49	

LABORATORY CONTROL SAMPLE: 2328167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	2.5	2.4	94	70-130	
2-Methylnaphthalene	ug/L	2.5	2.3	91	70-130	
Acenaphthene	ug/L	2.5	2.5	99	70-130	
Acenaphthylene	ug/L	2.5	2.4	95	70-130	
Anthracene	ug/L	2.5	2.6	103	70-130	
Benzo(a)anthracene	ug/L	2.5	2.4	98	70-130	
Benzo(a)pyrene	ug/L	2.5	2.5	100	70-130	
Benzo(b)fluoranthene	ug/L	2.5	2.4	95	70-130	
Benzo(g,h,i)perylene	ug/L	2.5	2.3	94	70-130	
Benzo(k)fluoranthene	ug/L	2.5	2.4	97	70-130	
Chrysene	ug/L	2.5	2.7	107	70-130	
Dibenz(a,h)anthracene	ug/L	2.5	2.5	101	70-130	
Fluoranthene	ug/L	2.5	2.5	102	70-130	
Fluorene	ug/L	2.5	2.5	99	70-130	
Indeno(1,2,3-cd)pyrene	ug/L	2.5	2.6	106	70-130	
Naphthalene	ug/L	2.5	2.0	82	70-130	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

LABORATORY CONTROL SAMPLE: 2328167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	2.5	2.4	95	70-130	
Pyrene	ug/L	2.5	2.5	100	70-130	
2-Fluorobiphenyl (S)	%			79	70-130	
Nitrobenzene-d5 (S)	%			107	70-130	

MATRIX SPIKE SAMPLE: 2328168

Parameter	Units	92391608004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	ND	2.5	2.8	113	70-130	
2-Methylnaphthalene	ug/L	ND	2.5	2.8	111	70-130	
Acenaphthene	ug/L	ND	2.5	3.0	120	70-130	
Acenaphthylene	ug/L	ND	2.5	2.9	117	70-130	
Anthracene	ug/L	ND	2.5	3.2	126	70-130	
Benzo(a)anthracene	ug/L	ND	2.5	2.8	113	70-130	
Benzo(a)pyrene	ug/L	ND	2.5	2.8	113	70-130	
Benzo(b)fluoranthene	ug/L	ND	2.5	2.8	111	70-130	
Benzo(g,h,i)perylene	ug/L	ND	2.5	2.6	104	70-130	
Benzo(k)fluoranthene	ug/L	ND	2.5	2.7	109	70-130	
Chrysene	ug/L	ND	2.5	3.1	126	70-130	
Dibenz(a,h)anthracene	ug/L	ND	2.5	2.8	112	70-130	
Fluoranthene	ug/L	ND	2.5	3.0	119	70-130	
Fluorene	ug/L	ND	2.5	3.0	122	70-130	
Indeno(1,2,3-cd)pyrene	ug/L	ND	2.5	2.9	115	70-130	
Naphthalene	ug/L	ND	2.5	2.5	98	70-130	
Phenanthrene	ug/L	ND	2.5	2.9	114	70-130	
Pyrene	ug/L	ND	2.5	2.9	117	70-130	
2-Fluorobiphenyl (S)	%				84	70-130	
Nitrobenzene-d5 (S)	%				115	70-130	

SAMPLE DUPLICATE: 2328169

Parameter	Units	92391628001 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	
Benzo(k)fluoranthene	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

SAMPLE DUPLICATE: 2328169

Parameter	Units	92391628001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
2-Fluorobiphenyl (S)	%	79	85	7		
Nitrobenzene-d5 (S)	%	110	109	1		

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

QC Batch: 418835 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92391608001, 92391608002, 92391608003

SAMPLE DUPLICATE: 2321705

Parameter	Units	92391517001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.2	11.4	1	25	

SAMPLE DUPLICATE: 2321729

Parameter	Units	35403559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	51.8	50.4	3	25	

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QUALIFIERS

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

WORKORDER QUALIFIERS

WO: 92391608

[2]	This revision was issued on 8/30/18 to correctly report the 8270 fraction for two samples. Upon the reanalysis upload, the data for two samples was switched. This has been corrected.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
IO	The internal standard response was outside the laboratory acceptance limits confirmed by reanalysis. The results reported are from the most QC compliant analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
S0	Surrogate recovery outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Eastern Drainage Ditch - Sed
Pace Project No.: 92391608

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92391608004	**ABL-EB001-F005**	EPA 3510C	418714	EPA 8082A	419331
92391608001	**ABL-SD010-F005**	EPA 3546	418842	EPA 8082A	419076
92391608002	**ABL-SD011-F005**	EPA 3546	418842	EPA 8082A	419076
92391608003	**ABL-SD012-F005**	EPA 3546	418842	EPA 8082A	419076
92391608001	**ABL-SD010-F005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391608002	**ABL-SD011-F005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391608003	**ABL-SD012-F005**	EPA 3546	418920	EPA 8270D by SIM	419465
92391608004	**ABL-EB001-F005**	EPA 3511	420210	EPA 8270D by SIM	420315
92391608001	**ABL-SD010-F005**	ASTM D2974-87	418835		
92391608002	**ABL-SD011-F005**	ASTM D2974-87	418835		
92391608003	**ABL-SD012-F005**	ASTM D2974-87	418835		

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Pace Analytical®	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville ☐ **Eden** ☐ **Greenwood** ☐ **Huntersville** ☑ **Raleigh** ☐ **Mechanicsville** ☐

Sample Condition Upon Receipt

Client Name: Environeering

Project #: WO#: 92391608

92391608

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☑ Client

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: MG 7/12/18

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T040

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 2.8 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 3.2

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on Ice, cooling process has begun

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT/SL	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: ACP **Date:** 07/12/18

Project Manager SRF Review: NMG **Date:** 7/12/18

Pace Analytical	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: **F-CAR-CS-033-Rev.06**	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO#: 92391608

PM: NMG Due Date: 07/25/18

CLIENT: 92-Alcoa

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1									3																			
2									3																			
3									3																			
4										2								3								2		
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, Incorrect preservative, out of temp, Incorrect containers.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A — Required Client Information:

Company: Environeering
Address: 138 Fort Jackson Road
Morrisville, NC 27560
Email: M WORDEN
Phone: Fax:
Requested Due Date: STD

Section B — Required Project Information:

Report To: Michael Worden
Copy To:
Purchase Order #:
Project Name: Eastern Drainage Ditch - Sediment
Project #: 137.263

Section C — Invoice Information:

Attention:
Company Name: ENVIRONEERING
Address: HOUSTON TX
Pace Quote:
Pace Project Manager: nicole.gasiorowski@pacelabs.com,
Pace Profile #: 7478

Regulatory Agency

State / Location: NC

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	8082 PCB Aroclors	1668 PCB congeners	8270SIM PAHs	8082 PCB Aroclors	1668 PCB congeners	8270SIM PAHs	Residual Chlorine (Y/N)	923911608
1	ABL-SD010-F005	SL	C	—	—	7/11			3	X									X	X	X					001
2	ABL-SD011-F005	SL	G	—	—	7/11			3	X									X	X	X					002
3	ABL-SD012-F005	SL	G	—	—	7/11			3	X									X	X	X					003
4	ABL-EB001-F005	WT	G	—	—	7/11			7	X												X	X	X		004
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

Matrix codes: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Environeering	7/11/18	1510	Environeering	7/11/18	1510				
	Amber Pack Environeering	7/11/18	1635		7/11/18	1635	3.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MICHAEL WORDEN

SIGNATURE of SAMPLER: [signature] DATE Signed: 7/11/18

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client - Charlotte
PACE Charlotte
9800 Kincey Ave.
Huntersville NC 28078

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date:
July 25, 2018

Report Information:

Pace Project #: 10439419
Sample Receipt Date: 07/13/2018
Client Project #: 92391608 Alcoa-Badin Works
Client Sub PO #: N/A
State Cert #: 27700

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:

July 25, 2018

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on four samples submitted by a representative of Pace Analytical - NC. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to 25-75 parts-per-trillion for solids and 0.25-0.75 parts-per-trillion for water. These results were adjusted for the amount of sample extracted.

The dilution level noted on the data tables is being adjusted to allow the correct data flags to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume. The standard reporting limits were not adjusted since the limits remained within the calibration range even after dilutions were applied.

The recoveries of the isotopically-labeled PCB internal standards in the sample extracts ranged from 43-115%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results table. Any associated target analyte detections were provided under the estimated maximum possible concentration (EMPC) column on the results table. If EMPCs were reported for congeners with WHO toxicity factors, the EMPC levels were included in the calculation of the toxic equivalence.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the PCB content of the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 71-125%, with relative percent differences of 0.0-22.5%. The RPD for the DiCB congeners in solid matrix spike pair was above the 20% limit used by Pace analytical. This could indicate a higher than normal variability in the Di-CB results from the associated sample extracts. However, these values were

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1700 Elm Street
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DISCUSSION

within method limits. Matrix spikes were not extracted with these sample batches.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

Chain of Custody

WO#: 10439419

10439419

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NC

Workorder: 92391608 Workorder Name: Eastern Drainage Ditch - Sed

Owner Received Date: 7/11/2

Report To	Subcontract To
Nicole Gasiorowski Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092	Pace Analytical Minnesota 1700 Elm Street SE Suite 200 Minneapolis, MN 55414 Phone (612)607-1700

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						1668 209 PCB Congeners												LAB USE ONLY
1	ABL-SD010-F005	PS	7/11/2018 00:00	92391608001	Solid	1						X												001
2	ABL-SD011-F005	PS	7/11/2018 00:00	92391608002	Solid	1						X												002
3	ABL-SD012-F005	PS	7/11/2018 00:00	92391608003	Solid	1						X												003
4	ABL-EB001-F005	PS	7/11/2018 00:00	92391608004	Water	2						X												004
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	7/12/18 (5pm)	Amrs/Pace	7/13/18
2				945
3				

Comments: Stanley County, NC

Cooler Temperature on Receipt 3.1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

USDA

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace. Charlotte

Project #: **WO#: 10439419**
PM: RT1 Due Date: 07/20/18
CLIENT: PASI-CHRLT

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 9394 2203 4027

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

Thermometer Used: ☑ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.1 **Cooler Temp Corrected (°C):** 3.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** true **Date and Initials of Person Examining Contents:** 7.13.18 A.H

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☑ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☑ Yes ☐ No	1.
Chain of Custody Filled Out?	☑ Yes ☐ No	2.
Chain of Custody Relinquished?	☑ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☐ Yes ☐ No ☑ N/A	4.
Samples Arrived within Hold Time?	☑ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☑ No	6.
Rush Turn Around Time Requested?	☐ Yes ☑ No	7.
Sufficient Volume?	☑ Yes ☐ No	8.
Correct Containers Used?	☑ Yes ☐ No	9.
-Pace Containers Used?	☑ Yes ☐ No	
Containers Intact?	☑ Yes ☐ No	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☑ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: Wt / Soil	☑ Yes ☐ No	12.
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes ☐ No ☑ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes ☐ No ☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes ☐ No ☑ N/A	14.
Trip Blank Present?	☐ Yes ☐ No ☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☑ N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nathan Roberg **Date:** 7/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

USDA REGULATED SOIL CHECKLIST

To Be Completed by SR Staff:

WO: 10439419 Date: 7/13/16 Initials: A.H

Sample Origin (circle one): DOMESTIC QUARANTINED FOREIGN

(Note: soil samples from Hawaii, Guam, Puerto Rico and the US Virgin Islands are considered to be of a Foreign Source)

If Domestic, circle State of Origin: AL AR CA FL GA LA MS (NC) NM NY OK OR SC TN TX VA

(Includes: IFA, SOD, Golden Nematode, Karnal Bunt and Witchweed) List County: Stanly

(USDA Permit/Compliance Agreement authorizes movement of samples from these domestic regulated zones)

If Quarantined, circle State of Origin: FL ID TX CA List County:

(Includes Fruit Fly, Giant African Snail and Pale Cyst Nematode)

(Movement is not authorized for Pale Cyst Nematode [ID or Giant African Snail [FL], remaining quarantines require additional paperwork)

If Foreign, list Country of Origin:

(Movement from some Canadian Providences is not allowed. Refer to CS-232 Regulated Soil Flow Chart)

REQUIREMENT	ACTION	COMPLETED
PPQ-530 Paperwork must be included for any samples from counties with a Fruit Fly Quarantine in TX. Refer to **MN-S063** through **MN-S065**	Scan PPQ-530 to the corresponding Project folder on the x drive. If PPQ-530 is not present, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)
Samples from ID may not be moved from the quarantined region. Refer to **MN-S055**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)
Samples from Giant African Snail Quarantine in FL may not be moved from the quarantined region. Refer to **MN-S068**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)

REQUIREMENT	ACTION	COMPLETED
"Special Handling" stickers are to be placed on all samples.	Did "special handling" stickers get placed on all sample containers?	(YES) NO
Samples must be segregated and stored in designated bins, shelves and coolers.	Were samples placed in a designated cooler, containers and shelves?	(YES) NO
Samples must be double contained to prevent accidental release.	Were there any signs of breakage or leakage (check for broken glass and/or loose soil in the cooler)? *If NO, ice and melt water can be disposed of by normal process (down the drain).*	YES (NO)
	If **YES**, were ice and melt water separated from the cooler and disposed of properly? **Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator).** **Ice and melt water should be baked at a temperature range of 121-154°F for 2 hours and then cooled before going down the drain.**	YES NO (N/A)
Equipment and supplies that have come into contact samples must be decontaminated.	Was the cooler(s) and/or countertop(s) decontaminated using either a fresh 10% bleach solution or 70% ethanol? *(Gloves and other lab supplies will be bagged and placed in the USDA Regulated satellite container or active drum).*	(YES) NO

Comments:

To Be Completed by PM and/or PC:

Sample Analysis to be conducted (circle all that apply): MN Subcontract Lab

Name of Subcontract Lab (s): _____

REQUIREMENT	ACTION	COMPLETED
Permission to ship untreated soil must be on file prior to shipping to any subcontract lab, including IR Pace Labs.	Go to: J:\SHARE\PRJ_MGR\10_Client Services Department Documents\Regulated Soils Permits – if permission to ship letter is not there, contact the Waste Coordinator.	YES NO N/A
Shipment must include a valid copy of the receiving lab's permit as well as permission to ship letter.	Is a copy of all needed paperwork included with the COC? Do **NOT** ship samples until all necessary paperwork is compiled.	YES NO N/A

Comments: _____

Project Manager Signature: Nathan Boberg Date: 8/16/18

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD010-F005		
Lab Sample ID	92391608001		
Filename	P180724B_09		
Injected By	CVS		
Total Amount Extracted	15.1 g	Matrix	Solid
% Moisture	32.8	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	07/11/2018
ICAL ID	P180724B02	Received	07/13/2018 09:45
CCal Filename(s)	P180724B_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/25/2018 06:20

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.575	2.97	2.0	1.12	56
13C-4-MoCB	3	12.415	3.22	2.0	1.15	57
13C-2,2'-DiCB	4	12.726	1.61	2.0	1.14	57
13C-4,4'-DiCB	15	19.924	1.68	2.0	1.31	65
13C-2,2',6-TrCB	19	16.570	0.95	2.0	1.59	80
13C-3,4,4'-TrCB	37	27.691	0.96	2.0	1.45	72
13C-2,2',6,6'-TeCB	54	20.229	0.86	2.0	1.28	64
13C-3,4,4',5-TeCB	81	34.840	0.84	2.0	1.44	72
13C-3,3',4,4'-TeCB	77	35.426	0.80	2.0	1.46	73
13C-2,2',4,6,6'-PeCB	104	26.282	1.75	2.0	1.25	62
13C-2,3,3',4,4'-PeCB	105	39.003	1.59	2.0	1.50	75
13C-2,3,4,4',5-PeCB	114	38.332	1.65	2.0	1.53	77
13C-2,3',4,4',5-PeCB	118	37.762	1.54	2.0	1.48	74
13C-2,3',4,4',5'-PeCB	123	37.427	1.59	2.0	1.47	73
13C-3,3',4,4',5-PeCB	126	42.189	1.60	2.0	1.62	81
13C-2,2',4,4',6,6'-HxCB	155	32.324	1.32	2.0	1.17	59
13C-HxCB(156/157)	156/157	45.213	1.30	4.0	2.90	73
13C-2,3',4,4',5,5'-HxCB	167	44.022	1.27	2.0	1.40	70
13C-3,3',4,4',5,5'-HxCB	169	48.516	1.28	2.0	1.56	78
13C-2,2',3,4',5,6,6'-HpCB	188	38.249	1.12	2.0	1.14	57
13C-2,3,3',4,4',5,5'-HpCB	189	51.022	1.16	2.0	1.46	73
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.720	0.89	2.0	1.33	67
13C-2,3,3',4,4',5,5',6-OcCB	205	53.091	0.84	2.0	1.36	68
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.514	0.80	2.0	1.39	69
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.505	0.83	2.0	1.31	66
13C--DeCB	209	55.979	0.68	2.0	1.48	74
CleanupStandards						
13C-2,4,4'-TrCB	28	23.298	1.13	2.0	1.48	74
13C-2,3,3',5,5'-PeCB	111	35.359	1.57	2.0	1.35	67
13C-2,2',3,3',5,5',6-HpCB	178	41.368	0.97	2.0	1.45	72
Recovery Standards						
13C-2,5-DiCB	9	15.192	1.63	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.276	0.83	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.592	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.948	1.30	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.703	0.84	2.0	NA	NA

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD010-F005
Lab Sample ID 92391608001
Filename P180724B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	25.0
2		---	---	ND	---	25.0
3		---	---	ND	---	25.0
4		12.750	1.45	66.8	---	25.0
5		---	---	ND	---	25.0
6		---	---	ND	---	25.0
7		---	---	ND	---	25.0
8		16.234	1.50	108	---	25.0
9		---	---	ND	---	25.0
10		---	---	ND	---	25.0
11		---	---	ND	---	245
12	12/13	---	---	ND	---	50.0
13	12/13	---	---	ND	---	50.0
14		---	---	ND	---	25.0
15		19.936	1.47	65.2	---	33.0
16		---	---	ND	---	25.0
17		19.373	1.08	102	---	25.0
18	18/30	---	---	ND	---	50.0
19		---	---	ND	---	25.0
20	20/28	23.314	1.03	535	---	129
21	21/33	---	---	ND	---	135
22		---	---	ND	---	95.0
23		---	---	ND	---	25.0
24		---	---	ND	---	25.0
25		---	---	ND	---	25.0
26	26/29	---	---	ND	---	50.0
27		---	---	ND	---	25.0
28	20/28	23.314	1.03	(535)	---	129
29	26/29	---	---	ND	---	50.0
30	18/30	---	---	ND	---	50.0
31		22.962	1.06	354	---	130
32		20.447	1.07	81.7	---	25.0
33	21/33	---	---	ND	---	135
34		---	---	ND	---	25.0
35		---	---	ND	---	25.0
36		---	---	ND	---	25.0
37		27.725	1.02	110	---	53.0
38		---	---	ND	---	25.0
39		---	---	ND	---	25.0
40	40/41/71	27.490	0.73	334	---	150
41	40/41/71	27.490	0.73	(334)	---	150
42		26.987	0.75	180	---	50.0
43	43/73	---	---	ND	---	50.0
44	44/47/65	26.417	0.78	715	---	150
45	45/51	23.398	0.82	111	---	100
46		---	---	ND	---	50.0
47	44/47/65	26.417	0.78	(715)	---	150
48		26.132	0.78	122	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD010-F005
Lab Sample ID 92391608001
Filename P180724B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	25.830	0.78	574	---	100
50	50/53	22.643	0.85	114	---	100
51	45/51	23.398	0.82	(111)	---	100
52		25.310	0.78	821	---	154
53	50/53	22.643	0.85	(114)	---	100
54		---	---	ND	---	50.0
55		---	---	ND	---	50.0
56		31.519	0.74	379	---	50.0
57		---	---	ND	---	50.0
58		---	---	ND	---	50.0
59	59/62/75	---	---	ND	---	150
60		31.737	0.85	177	---	50.0
61	61/70/74/76	30.463	0.80	1560	---	200
62	59/62/75	---	---	ND	---	150
63		30.111	0.81	51.6	---	50.0
64		27.741	0.78	426	---	50.0
65	44/47/65	26.417	0.78	(715)	---	150
66		30.815	0.75	1040	---	84.0
67		---	---	ND	---	50.0
68		---	---	ND	---	50.0
69	49/69	25.830	0.78	(574)	---	100
70	61/70/74/76	30.463	0.80	(1560)	---	200
71	40/41/71	27.490	0.73	(334)	---	150
72		---	---	ND	---	50.0
73	43/73	---	---	ND	---	50.0
74	61/70/74/76	30.463	0.80	(1560)	---	200
75	59/62/75	---	---	ND	---	150
76	61/70/74/76	30.463	0.80	(1560)	---	200
77		35.443	0.82	97.0	---	50.0
78		---	---	ND	---	50.0
79		---	---	ND	---	50.0
80		---	---	ND	---	50.0
81		---	---	ND	---	50.0
82		35.024	1.50	104	---	50.0
83		---	---	ND	---	50.0
84		30.681	1.45	145	---	50.0
85	85/116/117	34.538	1.53	264	---	150
86	86/87/97/108/119/125	33.750	1.55	439	---	300
87	86/87/97/108/119/125	33.750	1.55	(439)	---	300
88	88/91	30.430	1.74	140	---	100
89		---	---	ND	---	50.0
90	90/101/113	32.609	1.57	601	---	150
91	88/91	30.430	1.74	(140)	---	100
92		32.006	1.70	123	---	50.0
93	93/98/100/102	---	---	ND	---	200
94		---	---	ND	---	50.0
95		29.524	1.50	378	---	95.0
96		---	---	ND	---	50.0

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD010-F005
Lab Sample ID 92391608001
Filename P180724B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	33.750	1.55	(439)	---	300
98	93/98/100/102	---	---	ND	---	200
99		33.230	1.47	495	---	50.0
100	93/98/100/102	---	---	ND	---	200
101	90/101/113	32.609	1.57	(601)	---	150
102	93/98/100/102	---	---	ND	---	200
103		---	---	ND	---	50.0
104		---	---	ND	---	50.0
105		39.020	1.50	408	---	50.0
106		---	---	ND	---	50.0
107	107/124	---	---	ND	---	100
108	86/87/97/108/119/125	33.750	1.55	(439)	---	300
109		37.326	1.44	60.8	---	50.0
110	110/115	34.689	1.63	768	---	100
111		---	---	ND	---	50.0
112		---	---	ND	---	50.0
113	90/101/113	32.609	1.57	(601)	---	150
114		---	---	ND	---	50.0
115	110/115	34.689	1.63	(768)	---	100
116	85/116/117	34.538	1.53	(264)	---	150
117	85/116/117	34.538	1.53	(264)	---	150
118		37.779	1.52	681	---	64.0
119	86/87/97/108/119/125	33.750	1.55	(439)	---	300
120		---	---	ND	---	50.0
121		---	---	ND	---	50.0
122		---	---	ND	---	50.0
123		---	---	ND	---	50.0
124	107/124	---	---	ND	---	100
125	86/87/97/108/119/125	33.750	1.55	(439)	---	300
126		---	---	ND	---	50.0
127		---	---	ND	---	50.0
128	128/166	---	---	ND	---	100
129	129/138/163	40.982	1.32	497	---	150
130		---	---	ND	---	50.0
131		---	---	ND	---	50.0
132		37.896	1.23	114	---	50.0
133		---	---	ND	---	50.0
134	134/143	---	---	ND	---	100
135	135/151	35.611	1.23	147	---	100
136		---	---	ND	---	50.0
137		---	---	ND	---	50.0
138	129/138/163	40.982	1.32	(497)	---	150
139	139/140	---	---	ND	---	100
140	139/140	---	---	ND	---	100
141		39.909	1.18	69.7	---	50.0
142		---	---	ND	---	50.0
143	134/143	---	---	ND	---	100
144		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD010-F005
Lab Sample ID 92391608001
Filename P180724B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	50.0
146		39.037	1.21	66.3	---	50.0
147	147/149	36.572	1.26	287	---	100
148		---	---	ND	---	50.0
149	147/149	36.572	1.26	(287)	---	100
150		---	---	ND	---	50.0
151	135/151	35.611	1.23	(147)	---	100
152		---	---	ND	---	50.0
153	153/168	39.691	1.20	408	---	100
154		---	---	ND	---	50.0
155		---	---	ND	---	50.0
156	156/157	---	---	ND	---	100
157	156/157	---	---	ND	---	100
158		---	---	ND	---	50.0
159		---	---	ND	---	50.0
160		---	---	ND	---	50.0
161		---	---	ND	---	50.0
162		---	---	ND	---	50.0
163	129/138/163	40.982	1.32	(497)	---	150
164		---	---	ND	---	50.0
165		---	---	ND	---	50.0
166	128/166	---	---	ND	---	100
167		---	---	ND	---	50.0
168	153/168	39.691	1.20	(408)	---	100
169		---	---	ND	---	50.0
170		47.929	1.10	111	---	50.0
171	171/173	---	---	ND	---	100
172		---	---	ND	---	50.0
173	171/173	---	---	ND	---	100
174		43.217	1.12	126	---	50.0
175		---	---	ND	---	50.0
176		---	---	ND	---	50.0
177		43.653	1.10	77.9	---	50.0
178		---	---	ND	---	50.0
179		38.634	1.00	51.4	---	50.0
180	180/193	46.621	0.96	263	---	100
181		---	---	ND	---	50.0
182		---	---	ND	---	50.0
183	183/185	---	---	ND	---	100
184		---	---	ND	---	50.0
185	183/185	---	---	ND	---	100
186		---	---	ND	---	50.0
187		42.323	1.04	189	---	50.0
188		---	---	ND	---	50.0
189		---	---	ND	---	50.0
190		---	---	ND	---	50.0
191		---	---	ND	---	50.0
192		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD010-F005
Lab Sample ID 92391608001
Filename P180724B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	46.621	0.96	(263)	---	100
194		---	---	ND	---	75.0
195		---	---	ND	---	75.0
196		---	---	ND	---	75.0
197	197/200	---	---	ND	---	150
198	198/199	---	---	ND	---	150
199	198/199	---	---	ND	---	150
200	197/200	---	---	ND	---	150
201		---	---	ND	---	75.0
202		---	---	ND	---	75.0
203		---	---	ND	---	75.0
204		---	---	ND	---	75.0
205		---	---	ND	---	75.0
206		---	---	ND	---	75.0
207		---	---	ND	---	75.0
208		---	---	ND	---	75.0
209		---	---	ND	---	75.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD010-F005
Lab Sample ID	92391608001
Filename	P180724B_09

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	240
Total Trichloro Biphenyls	1180
Total Tetrachloro Biphenyls	6700
Total Pentachloro Biphenyls	4610
Total Hexachloro Biphenyls	1590
Total Heptachloro Biphenyls	818
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	15100

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD011-F005		
Lab Sample ID	92391608002		
Filename	P180724B_10		
Injected By	CVS		
Total Amount Extracted	17.5 g	Matrix	Solid
% Moisture	42.4	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	07/11/2018
ICAL ID	P180724B02	Received	07/13/2018 09:45
CCal Filename(s)	P180724B_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/25/2018 07:20

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes							
13C-2-MoCB	1	9.563	2.79	2.0	1.13	56	
13C-4-MoCB	3	12.427	2.79	2.0	1.16	58	
13C-2,2'-DiCB	4	12.739	1.56	2.0	1.12	56	
13C-4,4'-DiCB	15	20.021	1.49	2.0	0.867	43	
13C-2,2',6-TrCB	19	16.607	1.02	2.0	1.38	69	
13C-3,4,4'-TrCB	37	27.742	1.16	2.0	1.61	81	
13C-2,2',6,6'-TeCB	54	20.365	0.80	2.0	1.27	64	
13C-3,4,4',5-TeCB	81	34.857	0.85	2.0	1.61	81	
13C-3,3',4,4'-TeCB	77	35.461	0.93	2.0	1.49	81	I
13C-2,2',4,6,6'-PeCB	104	26.334	1.61	2.0	1.23	61	
13C-2,3,3',4,4'-PeCB	105	39.022	1.54	2.0	1.55	77	
13C-2,3,4,4',5-PeCB	114	38.334	1.45	2.0	1.50	75	
13C-2,3',4,4',5-PeCB	118	37.781	1.71	2.0	1.47	74	
13C-2,3',4,4',5'-PeCB	123	37.445	1.50	2.0	1.51	76	
13C-3,3',4,4',5-PeCB	126	42.175	1.50	2.0	1.57	79	
13C-2,2',4,4',6,6'-HxCB	155	32.493	1.25	2.0	1.25	63	
13C-HxCB(156/157)	156/157	45.249	1.30	4.0	2.79	70	
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.28	2.0	1.36	68	
13C-3,3',4,4',5,5'-HxCB	169	48.535	1.17	2.0	1.50	75	
13C-2,2',3,4',5,6,6'-HpCB	188	38.250	1.13	2.0	1.28	64	
13C-2,3,3',4,4',5,5'-HpCB	189	51.046	1.01	2.0	1.37	68	
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.88	2.0	1.31	65	
13C-2,3,3',4,4',5,5',6-OcCB	205	53.094	0.88	2.0	1.49	75	
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.538	0.76	2.0	1.41	71	
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.507	0.79	2.0	1.19	60	
13C--DeCB	209	55.982	0.82	2.0	1.33	72	I
CleanupStandards							
13C-2,4,4'-TrCB	28	23.332	1.17	2.0	1.57	78	
13C-2,3,3',5,5'-PeCB	111	35.428	1.65	2.0	1.38	69	
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.19	2.0	1.44	72	
Recovery Standards							
13C-2,5-DiCB	9	15.205	1.60	2.0	NA	NA	
13C-2,2',5,5'-TeCB	52	25.311	0.74	2.0	NA	NA	
13C-2,2',4,5,5'-PeCB	101	32.745	1.58	2.0	NA	NA	
13C-2,2',3,4,4',5'-HxCB	138	40.967	1.30	2.0	NA	NA	
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.728	0.91	2.0	NA	NA	

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD011-F005
Lab Sample ID 92391608002
Filename P180724B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	25.0
2		---	---	ND	---	25.0
3		---	---	ND	---	25.0
4		12.751	1.37	159	---	25.0
5		---	---	ND	---	25.0
6		15.720	1.67	33.0	---	25.0
7		---	---	ND	---	25.0
8		16.247	1.50	316	---	25.0
9		---	---	ND	---	25.0
10		---	---	ND	---	25.0
11		---	---	ND	---	245
12	12/13	---	---	ND	---	50.0
13	12/13	---	---	ND	---	50.0
14		---	---	ND	---	25.0
15		20.034	1.60	101	---	33.0
16		20.010	1.02	165	---	25.0
17		19.614	1.13	289	---	25.0
18	18/30	19.410	1.00	179	---	50.0
19		16.631	0.99	105	---	25.0
20	20/28	23.349	1.02	1480	---	129
21	21/33	23.601	1.09	520	---	135
22		24.053	1.07	369	---	95.0
23		---	---	ND	---	25.0
24		---	---	ND	---	25.0
25		22.695	1.00	42.1	---	25.0
26	26/29	22.410	1.05	123	---	50.0
27		19.770	0.99	42.3	---	25.0
28	20/28	23.349	1.02	(1480)	---	129
29	26/29	22.410	1.05	(123)	---	50.0
30	18/30	19.410	1.00	(179)	---	50.0
31		23.014	1.01	1320	---	130
32		20.532	1.13	278	---	25.0
33	21/33	23.601	1.09	(520)	---	135
34		---	---	ND	---	25.0
35		---	---	ND	---	25.0
36		---	---	ND	---	25.0
37		27.759	1.01	490	---	53.0
38		---	---	ND	---	25.0
39		---	---	ND	---	25.0
40	40/41/71	27.541	0.74	1240	---	150
41	40/41/71	27.541	0.74	(1240)	---	150
42		27.004	0.73	733	---	50.0
43	43/73	25.596	0.74	74.9	---	50.0
44	44/47/65	26.434	0.78	2440	---	150
45	45/51	23.450	0.84	387	---	100
46		23.785	0.82	118	---	50.0
47	44/47/65	26.434	0.78	(2440)	---	150
48		26.166	0.80	458	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD011-F005
Lab Sample ID 92391608002
Filename P180724B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	25.881	0.76	1760	---	100
50	50/53	22.712	0.75	361	---	100
51	45/51	23.450	0.84	(387)	---	100
52		25.344	0.77	2770	---	154
53	50/53	22.712	0.75	(361)	---	100
54		---	---	ND	---	50.0
55		---	---	ND	---	50.0
56		31.638	0.81	1580	---	50.0
57		---	---	ND	---	50.0
58		---	---	ND	---	50.0
59	59/62/75	26.803	0.71	207	---	150
60		31.889	0.77	979	---	50.0
61	61/70/74/76	30.531	0.77	6050	---	200
62	59/62/75	26.803	0.71	(207)	---	150
63		30.162	0.76	172	---	50.0
64		27.792	0.78	1460	---	50.0
65	44/47/65	26.434	0.78	(2440)	---	150
66		30.900	0.77	3870	---	84.0
67		29.877	0.75	63.4	---	50.0
68		---	---	ND	---	50.0
69	49/69	25.881	0.76	(1760)	---	100
70	61/70/74/76	30.531	0.77	(6050)	---	200
71	40/41/71	27.541	0.74	(1240)	---	150
72		---	---	ND	---	50.0
73	43/73	25.596	0.74	(74.9)	---	50.0
74	61/70/74/76	30.531	0.77	(6050)	---	200
75	59/62/75	26.803	0.71	(207)	---	150
76	61/70/74/76	30.531	0.77	(6050)	---	200
77		35.461	0.81	534	---	50.0
78		---	---	ND	---	50.0
79		---	---	ND	---	50.0
80		---	---	ND	---	50.0
81		---	---	ND	---	50.0
82		35.059	1.52	797	---	50.0
83		33.197	1.60	377	---	50.0
84		30.766	1.64	709	---	50.0
85	85/116/117	34.556	1.47	1570	---	150
86	86/87/97/108/119/125	33.918	1.52	3480	---	300
87	86/87/97/108/119/125	33.918	1.52	(3480)	---	300
88	88/91	30.514	1.48	612	---	100
89		31.286	1.51	88.2	---	50.0
90	90/101/113	32.761	1.54	6150	---	150
91	88/91	30.514	1.48	(612)	---	100
92		32.158	1.60	884	---	50.0
93	93/98/100/102	29.944	1.58	239	---	200
94		---	---	ND	---	50.0
95		29.575	1.56	2310	---	95.0
96		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD011-F005
Lab Sample ID 92391608002
Filename P180724B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	33.918	1.52	(3480)	---	300
98	93/98/100/102	29.944	1.58	(239)	---	200
99		33.298	1.52	2880	---	50.0
100	93/98/100/102	29.944	1.58	(239)	---	200
101	90/101/113	32.761	1.54	(6150)	---	150
102	93/98/100/102	29.944	1.58	(239)	---	200
103		---	---	ND	---	50.0
104		---	---	ND	---	50.0
105		39.039	1.57	4400	---	50.0
106		---	---	ND	---	50.0
107	107/124	37.093	1.54	305	---	100
108	86/87/97/108/119/125	33.918	1.52	(3480)	---	300
109		37.361	1.56	545	---	50.0
110	110/115	34.723	1.55	5290	---	100
111		---	---	ND	---	50.0
112		---	---	ND	---	50.0
113	90/101/113	32.761	1.54	(6150)	---	150
114		38.368	1.44	388	---	50.0
115	110/115	34.723	1.55	(5290)	---	100
116	85/116/117	34.556	1.47	(1570)	---	150
117	85/116/117	34.556	1.47	(1570)	---	150
118		37.814	1.52	8100	---	64.0
119	86/87/97/108/119/125	33.918	1.52	(3480)	---	300
120		---	---	ND	---	50.0
121		---	---	ND	---	50.0
122		38.167	1.51	162	---	50.0
123		37.462	1.61	297	---	50.0
124	107/124	37.093	1.54	(305)	---	100
125	86/87/97/108/119/125	33.918	1.52	(3480)	---	300
126		---	---	ND	---	50.0
127		---	---	ND	---	50.0
128	128/166	42.342	1.22	4320	---	100
129	129/138/163	41.001	1.23	49500	---	150
130		40.330	1.33	1200	---	50.0
131		37.428	1.22	210	---	50.0
132		37.915	1.19	8500	---	50.0
133		38.401	1.21	450	---	50.0
134	134/143	36.825	1.21	1170	---	100
135	135/151	35.629	1.22	15300	---	100
136		33.231	1.24	2960	---	50.0
137		40.548	1.21	386	---	50.0
138	129/138/163	41.001	1.23	(49500)	---	150
139	139/140	---	---	ND	---	100
140	139/140	---	---	ND	---	100
141		39.911	1.19	13200	---	50.0
142		---	---	ND	---	50.0
143	134/143	36.825	1.21	(1170)	---	100
144		36.232	1.19	2290	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD011-F005
Lab Sample ID 92391608002
Filename P180724B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	50.0
146		39.055	1.25	6150	---	50.0
147	147/149	36.607	1.24	31800	---	100
148		---	---	ND	---	50.0
149	147/149	36.607	1.24	(31800)	---	100
150		---	---	ND	---	50.0
151	135/151	35.629	1.22	(15300)	---	100
152		---	---	ND	---	50.0
153	153/168	39.693	1.23	56000	---	100
154		35.897	1.10	61.4	---	50.0
155		---	---	ND	---	50.0
156	156/157	45.232	1.26	3830	---	100
157	156/157	45.232	1.26	(3830)	---	100
158		41.387	1.25	3970	---	50.0
159		43.237	1.28	1680	---	50.0
160		---	---	ND	---	50.0
161		---	---	ND	---	50.0
162		---	---	ND	---	50.0
163	129/138/163	41.001	1.23	(49500)	---	150
164		40.682	1.23	2620	---	50.0
165		38.670	1.15	223	---	50.0
166	128/166	42.342	1.22	(4320)	---	100
167		44.075	1.26	1300	---	50.0
168	153/168	39.693	1.23	(56000)	---	100
169		48.535	1.64 I	---	165	50.0
170		47.915	1.03	43600	---	50.0
171	171/173	44.326	1.01	12900	---	100
172		45.953	1.03	8070	---	50.0
173	171/173	44.326	1.01	(12900)	---	100
174		43.220	1.04	46100	---	50.0
175		42.074	1.06	1890	---	50.0
176		39.558	1.04	5890	---	50.0
177		43.673	1.03	26600	---	50.0
178		41.420	1.05	9670	---	50.0
179		38.653	1.03	18500	---	50.0
180	180/193	46.624	1.04	119000	---	100
181		44.092	0.92	74.9	---	50.0
182		---	---	ND	---	50.0
183	183/185	42.968	1.04	35200	---	100
184		---	---	ND	---	50.0
185	183/185	42.968	1.04	(35200)	---	100
186		---	---	ND	---	50.0
187		42.342	1.03	59100	---	50.0
188		---	---	ND	---	50.0
189		51.068	1.08	1570	---	50.0
190		48.468	1.02	11200	---	50.0
191		46.976	1.08	2030	---	50.0
192		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD011-F005
Lab Sample ID 92391608002
Filename P180724B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	46.624	1.04	(119000)	---	100
194		52.749	0.89	31700	---	75.0
195		50.831	0.90	13000	---	75.0
196		49.257	0.89	17700	---	75.0
197	197/200	45.752	0.89	5410	---	150
198	198/199	48.586	0.89	35100	---	150
199	198/199	48.586	0.89	(35100)	---	150
200	197/200	45.752	0.89	(5410)	---	150
201		44.712	0.89	4620	---	75.0
202		43.756	0.88	5540	---	75.0
203		49.458	0.89	20200	---	75.0
204		---	---	ND	---	75.0
205		53.116	0.96	1500	---	75.0
206		54.560	0.79	6660	---	75.0
207		51.412	0.76	1170	---	75.0
208		50.529	0.80	1430	---	75.0
209		56.025	0.64	113	---	75.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD011-F005
Lab Sample ID	92391608002
Filename	P180724B_10

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	610
Total Trichloro Biphenyls	5410
Total Tetrachloro Biphenyls	25300
Total Pentachloro Biphenyls	39600
Total Hexachloro Biphenyls	207000
Total Heptachloro Biphenyls	402000
Total Octachloro Biphenyls	135000
Total Nonachloro Biphenyls	9260
DecachloroBiphenyls	113
Total PCBs	824000

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SD012-F005		
Lab Sample ID	92391608003		
Filename	P180724B_08		
Injected By	CVS		
Total Amount Extracted	14.6 g	Matrix	Solid
% Moisture	31.2	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	07/11/2018
ICAL ID	P180724B02	Received	07/13/2018 09:45
CCal Filename(s)	P180724B_01	Extracted	07/17/2018 15:00
Method Blank ID	BLANK-63507	Analyzed	07/25/2018 05:21

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.86	2.0	1.38	69
13C-4-MoCB	3	12.451	3.22	2.0	1.36	68
13C-2,2'-DiCB	4	12.750	1.57	2.0	1.43	71
13C-4,4'-DiCB	15	19.902	1.58	2.0	1.64	82
13C-2,2',6-TrCB	19	16.570	0.96	2.0	1.59	79
13C-3,4,4'-TrCB	37	27.694	1.13	2.0	1.80	90
13C-2,2',6,6'-TeCB	54	20.214	0.82	2.0	1.43	72
13C-3,4,4',5-TeCB	81	34.845	0.77	2.0	1.79	90
13C-3,3',4,4'-TeCB	77	35.415	0.74	2.0	1.76	88
13C-2,2',4,6,6'-PeCB	104	26.319	1.68	2.0	1.58	79
13C-2,3,3',4,4'-PeCB	105	39.026	1.78	2.0	1.90	95
13C-2,3,4,4',5-PeCB	114	38.322	1.57	2.0	1.86	93
13C-2,3',4,4',5-PeCB	118	37.768	1.69	2.0	1.95	97
13C-2,3',4,4',5'-PeCB	123	37.433	1.69	2.0	1.91	96
13C-3,3',4,4',5-PeCB	126	42.195	1.60	2.0	1.94	97
13C-2,2',4,4',6,6'-HxCB	155	32.329	1.33	2.0	1.55	77
13C-HxCB(156/157)	156/157	45.236	1.29	4.0	3.52	88
13C-2,3',4,4',5,5'-HxCB	167	44.029	1.30	2.0	1.67	84
13C-3,3',4,4',5,5'-HxCB	169	48.591	1.24	2.0	1.72	86
13C-2,2',3,4',5,6,6'-HpCB	188	38.238	1.08	2.0	2.11	105
13C-2,3,3',4,4',5,5'-HpCB	189	51.095	1.01	2.0	2.19	110
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.743	0.89	2.0	2.22	111
13C-2,3,3',4,4',5,5',6-OcCB	205	53.164	0.90	2.0	1.86	93
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.587	0.73	2.0	2.07	104
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.556	0.79	2.0	2.12	106
13C--DeCB	209	56.031	0.73	2.0	2.31	115
CleanupStandards						
13C-2,4,4'-TrCB	28	23.283	0.98	2.0	1.96	98
13C-2,3,3',5,5'-PeCB	111	35.398	1.63	2.0	1.95	97
13C-2,2',3,3',5,5',6-HpCB	178	41.390	1.06	2.0	2.04	102
Recovery Standards						
13C-2,5-DiCB	9	15.205	1.55	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.296	0.82	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.614	1.53	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.971	1.32	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.798	0.91	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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ND = Not Detected
NA = Not Applicable
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD012-F005
Lab Sample ID 92391608003
Filename P180724B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	25.0
2		---	---	ND	---	25.0
3		---	---	ND	---	25.0
4		---	---	ND	---	25.0
5		---	---	ND	---	25.0
6		---	---	ND	---	25.0
7		---	---	ND	---	25.0
8		---	---	ND	---	25.0
9		---	---	ND	---	25.0
10		---	---	ND	---	25.0
11		---	---	ND	---	245
12	12/13	---	---	ND	---	50.0
13	12/13	---	---	ND	---	50.0
14		---	---	ND	---	25.0
15		---	---	ND	---	33.0
16		---	---	ND	---	25.0
17		---	---	ND	---	25.0
18	18/30	---	---	ND	---	50.0
19		---	---	ND	---	25.0
20	20/28	---	---	ND	---	129
21	21/33	---	---	ND	---	135
22		---	---	ND	---	95.0
23		---	---	ND	---	25.0
24		---	---	ND	---	25.0
25		---	---	ND	---	25.0
26	26/29	---	---	ND	---	50.0
27		---	---	ND	---	25.0
28	20/28	---	---	ND	---	129
29	26/29	---	---	ND	---	50.0
30	18/30	---	---	ND	---	50.0
31		---	---	ND	---	130
32		---	---	ND	---	25.0
33	21/33	---	---	ND	---	135
34		---	---	ND	---	25.0
35		---	---	ND	---	25.0
36		---	---	ND	---	25.0
37		---	---	ND	---	53.0
38		---	---	ND	---	25.0
39		---	---	ND	---	25.0
40	40/41/71	---	---	ND	---	150
41	40/41/71	---	---	ND	---	150
42		---	---	ND	---	50.0
43	43/73	---	---	ND	---	50.0
44	44/47/65	---	---	ND	---	150
45	45/51	---	---	ND	---	100
46		---	---	ND	---	50.0
47	44/47/65	---	---	ND	---	150
48		---	---	ND	---	50.0

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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ND = Not Detected
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD012-F005
Lab Sample ID 92391608003
Filename P180724B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	---	---	ND	---	100
50	50/53	---	---	ND	---	100
51	45/51	---	---	ND	---	100
52		---	---	ND	---	154
53	50/53	---	---	ND	---	100
54		---	---	ND	---	50.0
55		---	---	ND	---	50.0
56		---	---	ND	---	50.0
57		---	---	ND	---	50.0
58		---	---	ND	---	50.0
59	59/62/75	---	---	ND	---	150
60		---	---	ND	---	50.0
61	61/70/74/76	---	---	ND	---	200
62	59/62/75	---	---	ND	---	150
63		---	---	ND	---	50.0
64		---	---	ND	---	50.0
65	44/47/65	---	---	ND	---	150
66		---	---	ND	---	84.0
67		---	---	ND	---	50.0
68		---	---	ND	---	50.0
69	49/69	---	---	ND	---	100
70	61/70/74/76	---	---	ND	---	200
71	40/41/71	---	---	ND	---	150
72		---	---	ND	---	50.0
73	43/73	---	---	ND	---	50.0
74	61/70/74/76	---	---	ND	---	200
75	59/62/75	---	---	ND	---	150
76	61/70/74/76	---	---	ND	---	200
77		---	---	ND	---	50.0
78		---	---	ND	---	50.0
79		---	---	ND	---	50.0
80		---	---	ND	---	50.0
81		---	---	ND	---	50.0
82		---	---	ND	---	50.0
83		---	---	ND	---	50.0
84		---	---	ND	---	50.0
85	85/116/117	---	---	ND	---	150
86	86/87/97/108/119/125	---	---	ND	---	300
87	86/87/97/108/119/125	---	---	ND	---	300
88	88/91	---	---	ND	---	100
89		---	---	ND	---	50.0
90	90/101/113	---	---	ND	---	150
91	88/91	---	---	ND	---	100
92		---	---	ND	---	50.0
93	93/98/100/102	---	---	ND	---	200
94		---	---	ND	---	50.0
95		---	---	ND	---	95.0
96		---	---	ND	---	50.0

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD012-F005
Lab Sample ID 92391608003
Filename P180724B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	---	---	ND	---	300
98	93/98/100/102	---	---	ND	---	200
99		---	---	ND	---	50.0
100	93/98/100/102	---	---	ND	---	200
101	90/101/113	---	---	ND	---	150
102	93/98/100/102	---	---	ND	---	200
103		---	---	ND	---	50.0
104		---	---	ND	---	50.0
105		---	---	ND	---	50.0
106		---	---	ND	---	50.0
107	107/124	---	---	ND	---	100
108	86/87/97/108/119/125	---	---	ND	---	300
109		---	---	ND	---	50.0
110	110/115	---	---	ND	---	100
111		---	---	ND	---	50.0
112		---	---	ND	---	50.0
113	90/101/113	---	---	ND	---	150
114		---	---	ND	---	50.0
115	110/115	---	---	ND	---	100
116	85/116/117	---	---	ND	---	150
117	85/116/117	---	---	ND	---	150
118		---	---	ND	---	64.0
119	86/87/97/108/119/125	---	---	ND	---	300
120		---	---	ND	---	50.0
121		---	---	ND	---	50.0
122		---	---	ND	---	50.0
123		---	---	ND	---	50.0
124	107/124	---	---	ND	---	100
125	86/87/97/108/119/125	---	---	ND	---	300
126		---	---	ND	---	50.0
127		---	---	ND	---	50.0
128	128/166	---	---	ND	---	100
129	129/138/163	40.971	1.27	214	---	150
130		---	---	ND	---	50.0
131		---	---	ND	---	50.0
132		---	---	ND	---	50.0
133		---	---	ND	---	50.0
134	134/143	---	---	ND	---	100
135	135/151	---	---	ND	---	100
136		---	---	ND	---	50.0
137		---	---	ND	---	50.0
138	129/138/163	40.971	1.27	(214)	---	150
139	139/140	---	---	ND	---	100
140	139/140	---	---	ND	---	100
141		---	---	ND	---	50.0
142		---	---	ND	---	50.0
143	134/143	---	---	ND	---	100
144		---	---	ND	---	50.0

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD012-F005
Lab Sample ID 92391608003
Filename P180724B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	50.0
146		---	---	ND	---	50.0
147	147/149	---	---	ND	---	100
148		---	---	ND	---	50.0
149	147/149	---	---	ND	---	100
150		---	---	ND	---	50.0
151	135/151	---	---	ND	---	100
152		---	---	ND	---	50.0
153	153/168	39.697	1.22	187	---	100
154		---	---	ND	---	50.0
155		---	---	ND	---	50.0
156	156/157	---	---	ND	---	100
157	156/157	---	---	ND	---	100
158		---	---	ND	---	50.0
159		---	---	ND	---	50.0
160		---	---	ND	---	50.0
161		---	---	ND	---	50.0
162		---	---	ND	---	50.0
163	129/138/163	40.971	1.27	(214)	---	150
164		---	---	ND	---	50.0
165		---	---	ND	---	50.0
166	128/166	---	---	ND	---	100
167		---	---	ND	---	50.0
168	153/168	39.697	1.22	(187)	---	100
169		---	---	ND	---	50.0
170		---	---	ND	---	50.0
171	171/173	---	---	ND	---	100
172		---	---	ND	---	50.0
173	171/173	---	---	ND	---	100
174		---	---	ND	---	50.0
175		---	---	ND	---	50.0
176		---	---	ND	---	50.0
177		---	---	ND	---	50.0
178		---	---	ND	---	50.0
179		---	---	ND	---	50.0
180	180/193	46.628	1.05	117	---	100
181		---	---	ND	---	50.0
182		---	---	ND	---	50.0
183	183/185	---	---	ND	---	100
184		---	---	ND	---	50.0
185	183/185	---	---	ND	---	100
186		---	---	ND	---	50.0
187		42.329	0.90	60.9	---	50.0
188		---	---	ND	---	50.0
189		---	---	ND	---	50.0
190		---	---	ND	---	50.0
191		---	---	ND	---	50.0
192		---	---	ND	---	50.0

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SD012-F005
Lab Sample ID 92391608003
Filename P180724B_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	46.628	1.05	(117)	---	100
194		---	---	ND	---	75.0
195		---	---	ND	---	75.0
196		---	---	ND	---	75.0
197	197/200	---	---	ND	---	150
198	198/199	---	---	ND	---	150
199	198/199	---	---	ND	---	150
200	197/200	---	---	ND	---	150
201		---	---	ND	---	75.0
202		---	---	ND	---	75.0
203		---	---	ND	---	75.0
204		---	---	ND	---	75.0
205		---	---	ND	---	75.0
206		---	---	ND	---	75.0
207		---	---	ND	---	75.0
208		---	---	ND	---	75.0
209		---	---	ND	---	75.0

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SD012-F005
Lab Sample ID	92391608003
Filename	P180724B_08

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	402
Total Heptachloro Biphenyls	178
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	580

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-EB001-F005		
Lab Sample ID	92391608004		
Filename	P180721B_07		
Injected By	BAL		
Total Amount Extracted	945 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/11/2018
ICAL ID	P180721B02	Received	07/13/2018 09:45
CCal Filename(s)	P180721B_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/21/2018 23:53

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.72	2.0	0.861	43
13C-4-MoCB	3	12.427	2.79	2.0	1.01	50
13C-2,2'-DiCB	4	12.727	1.61	2.0	0.915	46
13C-4,4'-DiCB	15	19.879	1.66	2.0	1.30	65
13C-2,2',6-TrCB	19	16.559	0.96	2.0	0.991	50
13C-3,4,4'-TrCB	37	27.694	1.09	2.0	1.81	90
13C-2,2',6,6'-TeCB	54	20.198	0.79	2.0	1.10	55
13C-3,4,4',5-TeCB	81	34.826	0.88	2.0	1.83	91
13C-3,3',4,4'-TeCB	77	35.429	0.76	2.0	1.77	89
13C-2,2',4,6,6'-PeCB	104	26.302	1.49	2.0	1.12	56
13C-2,3,3',4,4'-PeCB	105	39.006	1.62	2.0	1.84	92
13C-2,3,4,4',5-PeCB	114	38.319	1.58	2.0	1.79	90
13C-2,3',4,4',5-PeCB	118	37.765	1.62	2.0	1.81	90
13C-2,3',4,4',5'-PeCB	123	37.447	1.59	2.0	1.77	89
13C-3,3',4,4',5-PeCB	126	42.192	1.58	2.0	1.99	99
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.29	2.0	1.22	61
13C-HxCB(156/157)	156/157	45.233	1.25	4.0	3.46	87
13C-2,3',4,4',5,5'-HxCB	167	44.025	1.29	2.0	1.70	85
13C-3,3',4,4',5,5'-HxCB	169	48.536	1.30	2.0	1.86	93
13C-2,2',3,4',5,6,6'-HpCB	188	38.235	1.07	2.0	1.46	73
13C-2,3,3',4,4',5,5'-HpCB	189	51.025	1.11	2.0	1.92	96
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.91	2.0	1.55	77
13C-2,3,3',4,4',5,5',6-OcCB	205	53.095	0.90	2.0	1.74	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.539	0.79	2.0	1.53	76
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.486	0.79	2.0	1.52	76
13C--DeCB	209	55.983	0.72	2.0	1.52	76
CleanupStandards						
13C-2,4,4'-TrCB	28	23.284	1.05	2.0	1.66	83
13C-2,3,3',5,5'-PeCB	111	35.379	1.60	2.0	1.68	84
13C-2,2',3,3',5,5',6-HpCB	178	41.371	1.05	2.0	1.56	78
Recovery Standards						
13C-2,5-DiCB	9	15.182	1.59	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.279	0.82	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.579	1.55	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.24	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.707	1.02	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-EB001-F005
Lab Sample ID 92391608004
Filename P180721B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.250
2		---	---	ND	---	0.250
3		---	---	ND	---	0.250
4		---	---	ND	---	0.250
5		---	---	ND	---	0.250
6		---	---	ND	---	0.250
7		---	---	ND	---	0.250
8		---	---	ND	---	0.250
9		---	---	ND	---	0.250
10		---	---	ND	---	0.250
11		---	---	ND	---	2.45
12	12/13	---	---	ND	---	0.500
13	12/13	---	---	ND	---	0.500
14		---	---	ND	---	0.250
15		---	---	ND	---	0.330
16		---	---	ND	---	0.250
17		---	---	ND	---	0.250
18	18/30	---	---	ND	---	0.500
19		---	---	ND	---	0.250
20	20/28	---	---	ND	---	1.29
21	21/33	---	---	ND	---	1.35
22		---	---	ND	---	0.950
23		---	---	ND	---	0.250
24		---	---	ND	---	0.250
25		---	---	ND	---	0.250
26	26/29	---	---	ND	---	0.500
27		---	---	ND	---	0.250
28	20/28	---	---	ND	---	1.29
29	26/29	---	---	ND	---	0.500
30	18/30	---	---	ND	---	0.500
31		---	---	ND	---	1.30
32		---	---	ND	---	0.250
33	21/33	---	---	ND	---	1.35
34		---	---	ND	---	0.250
35		---	---	ND	---	0.250
36		---	---	ND	---	0.250
37		---	---	ND	---	0.530
38		---	---	ND	---	0.250
39		---	---	ND	---	0.250
40	40/41/71	---	---	ND	---	1.50
41	40/41/71	---	---	ND	---	1.50
42		---	---	ND	---	0.500
43	43/73	---	---	ND	---	0.500
44	44/47/65	---	---	ND	---	1.50
45	45/51	---	---	ND	---	1.00
46		---	---	ND	---	0.500
47	44/47/65	---	---	ND	---	1.50
48		---	---	ND	---	0.500

Conc = Concentration
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-EB001-F005
Lab Sample ID 92391608004
Filename P180721B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.00
50	50/53	---	---	ND	---	1.00
51	45/51	---	---	ND	---	1.00
52		---	---	ND	---	1.54
53	50/53	---	---	ND	---	1.00
54		---	---	ND	---	0.500
55		---	---	ND	---	0.500
56		---	---	ND	---	0.500
57		---	---	ND	---	0.500
58		---	---	ND	---	0.500
59	59/62/75	---	---	ND	---	1.50
60		---	---	ND	---	0.500
61	61/70/74/76	---	---	ND	---	2.00
62	59/62/75	---	---	ND	---	1.50
63		---	---	ND	---	0.500
64		---	---	ND	---	0.500
65	44/47/65	---	---	ND	---	1.50
66		---	---	ND	---	0.840
67		---	---	ND	---	0.500
68		---	---	ND	---	0.500
69	49/69	---	---	ND	---	1.00
70	61/70/74/76	---	---	ND	---	2.00
71	40/41/71	---	---	ND	---	1.50
72		---	---	ND	---	0.500
73	43/73	---	---	ND	---	0.500
74	61/70/74/76	---	---	ND	---	2.00
75	59/62/75	---	---	ND	---	1.50
76	61/70/74/76	---	---	ND	---	2.00
77		---	---	ND	---	0.500
78		---	---	ND	---	0.500
79		---	---	ND	---	0.500
80		---	---	ND	---	0.500
81		---	---	ND	---	0.500
82		---	---	ND	---	0.500
83		---	---	ND	---	0.500
84		---	---	ND	---	0.500
85	85/116/117	---	---	ND	---	1.50
86	86/87/97/108/119/125	---	---	ND	---	3.00
87	86/87/97/108/119/125	---	---	ND	---	3.00
88	88/91	---	---	ND	---	1.00
89		---	---	ND	---	0.500
90	90/101/113	---	---	ND	---	1.50
91	88/91	---	---	ND	---	1.00
92		---	---	ND	---	0.500
93	93/98/100/102	---	---	ND	---	2.00
94		---	---	ND	---	0.500
95		---	---	ND	---	0.950
96		---	---	ND	---	0.500

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-EB001-F005
Lab Sample ID 92391608004
Filename P180721B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.00
98	93/98/100/102	---	---	ND	---	2.00
99		---	---	ND	---	0.500
100	93/98/100/102	---	---	ND	---	2.00
101	90/101/113	---	---	ND	---	1.50
102	93/98/100/102	---	---	ND	---	2.00
103		---	---	ND	---	0.500
104		---	---	ND	---	0.500
105		---	---	ND	---	0.500
106		---	---	ND	---	0.500
107	107/124	---	---	ND	---	1.00
108	86/87/97/108/119/125	---	---	ND	---	3.00
109		---	---	ND	---	0.500
110	110/115	---	---	ND	---	1.00
111		---	---	ND	---	0.500
112		---	---	ND	---	0.500
113	90/101/113	---	---	ND	---	1.50
114		---	---	ND	---	0.500
115	110/115	---	---	ND	---	1.00
116	85/116/117	---	---	ND	---	1.50
117	85/116/117	---	---	ND	---	1.50
118		---	---	ND	---	0.640
119	86/87/97/108/119/125	---	---	ND	---	3.00
120		---	---	ND	---	0.500
121		---	---	ND	---	0.500
122		---	---	ND	---	0.500
123		---	---	ND	---	0.500
124	107/124	---	---	ND	---	1.00
125	86/87/97/108/119/125	---	---	ND	---	3.00
126		---	---	ND	---	0.500
127		---	---	ND	---	0.500
128	128/166	---	---	ND	---	1.00
129	129/138/163	---	---	ND	---	1.50
130		---	---	ND	---	0.500
131		---	---	ND	---	0.500
132		---	---	ND	---	0.500
133		---	---	ND	---	0.500
134	134/143	---	---	ND	---	1.00
135	135/151	---	---	ND	---	1.00
136		---	---	ND	---	0.500
137		---	---	ND	---	0.500
138	129/138/163	---	---	ND	---	1.50
139	139/140	---	---	ND	---	1.00
140	139/140	---	---	ND	---	1.00
141		---	---	ND	---	0.500
142		---	---	ND	---	0.500
143	134/143	---	---	ND	---	1.00
144		---	---	ND	---	0.500

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-EB001-F005
Lab Sample ID 92391608004
Filename P180721B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.500
146		---	---	ND	---	0.500
147	147/149	---	---	ND	---	1.00
148		---	---	ND	---	0.500
149	147/149	---	---	ND	---	1.00
150		---	---	ND	---	0.500
151	135/151	---	---	ND	---	1.00
152		---	---	ND	---	0.500
153	153/168	---	---	ND	---	1.00
154		---	---	ND	---	0.500
155		---	---	ND	---	0.500
156	156/157	---	---	ND	---	1.00
157	156/157	---	---	ND	---	1.00
158		---	---	ND	---	0.500
159		---	---	ND	---	0.500
160		---	---	ND	---	0.500
161		---	---	ND	---	0.500
162		---	---	ND	---	0.500
163	129/138/163	---	---	ND	---	1.50
164		---	---	ND	---	0.500
165		---	---	ND	---	0.500
166	128/166	---	---	ND	---	1.00
167		---	---	ND	---	0.500
168	153/168	---	---	ND	---	1.00
169		---	---	ND	---	0.500
170		---	---	ND	---	0.500
171	171/173	---	---	ND	---	1.00
172		---	---	ND	---	0.500
173	171/173	---	---	ND	---	1.00
174		---	---	ND	---	0.500
175		---	---	ND	---	0.500
176		---	---	ND	---	0.500
177		---	---	ND	---	0.500
178		---	---	ND	---	0.500
179		---	---	ND	---	0.500
180	180/193	---	---	ND	---	1.00
181		---	---	ND	---	0.500
182		---	---	ND	---	0.500
183	183/185	---	---	ND	---	1.00
184		---	---	ND	---	0.500
185	183/185	---	---	ND	---	1.00
186		---	---	ND	---	0.500
187		---	---	ND	---	0.500
188		---	---	ND	---	0.500
189		---	---	ND	---	0.500
190		---	---	ND	---	0.500
191		---	---	ND	---	0.500
192		---	---	ND	---	0.500

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-EB001-F005
Lab Sample ID 92391608004
Filename P180721B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.00
194		---	---	ND	---	0.750
195		---	---	ND	---	0.750
196		---	---	ND	---	0.750
197	197/200	---	---	ND	---	1.50
198	198/199	---	---	ND	---	1.50
199	198/199	---	---	ND	---	1.50
200	197/200	---	---	ND	---	1.50
201		---	---	ND	---	0.750
202		---	---	ND	---	0.750
203		---	---	ND	---	0.750
204		---	---	ND	---	0.750
205		---	---	ND	---	0.750
206		---	---	ND	---	0.750
207		---	---	ND	---	0.750
208		---	---	ND	---	0.750
209		---	---	ND	---	0.750

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-EB001-F005
Lab Sample ID	92391608004
Filename	P180721B_07

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-63512		
Filename	P180721B_06		
Injected By	BAL	Matrix	Water (QC Matrix)
Total Amount Extracted	1040 mL	Extracted	07/17/2018 13:15
ICAL ID	P180721B02	Analyzed	07/21/2018 22:54
CCal Filename(s)	P180721B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.94	2.0	1.30	65
13C-4-MoCB	3	12.439	2.84	2.0	1.42	71
13C-2,2'-DiCB	4	12.738	1.54	2.0	1.28	64
13C-4,4'-DiCB	15	19.890	1.52	2.0	1.48	74
13C-2,2',6-TrCB	19	16.559	0.96	2.0	1.91	96
13C-3,4,4'-TrCB	37	27.710	1.17	2.0	1.92	96
13C-2,2',6,6'-TeCB	54	20.197	0.89	2.0	1.45	73
13C-3,4,4',5-TeCB	81	34.825	0.84	2.0	1.81	90
13C-3,3',4,4'-TeCB	77	35.429	0.85	2.0	1.79	90
13C-2,2',4,6,6'-PeCB	104	26.318	1.52	2.0	1.28	64
13C-2,3,3',4,4'-PeCB	105	39.006	1.60	2.0	1.88	94
13C-2,3,4,4',5-PeCB	114	38.335	1.64	2.0	1.78	89
13C-2,3',4,4',5-PeCB	118	37.782	1.51	2.0	1.85	92
13C-2,3',4,4',5'-PeCB	123	37.446	1.49	2.0	1.85	93
13C-3,3',4,4',5-PeCB	126	42.192	1.59	2.0	1.97	99
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.27	2.0	1.27	64
13C-HxCB (156/157)	156/157	45.250	1.31	4.0	3.34	84
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.28	2.0	1.68	84
13C-3,3',4,4',5,5'-HxCB	169	48.536	1.29	2.0	1.86	93
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	1.02	2.0	1.47	74
13C-2,3,3',4,4',5,5'-HpCB	189	51.047	1.07	2.0	1.80	90
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.95	2.0	1.55	77
13C-2,3,3',4,4',5,5',6-OcCB	205	53.116	0.89	2.0	1.74	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.539	0.76	2.0	1.60	80
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.508	0.84	2.0	1.56	78
13C--DeCB	209	55.983	0.63	2.0	1.62	81
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.283	1.15	2.0	2.23	111
13C-2,3,3',5,5'-PeCB	111	35.396	1.61	2.0	1.82	91
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.05	2.0	1.75	87
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.295	0.75	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.595	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.728	0.94	2.0	NA	NA

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.241
2		---	---	ND	---	0.241
3		---	---	ND	---	0.241
4		---	---	ND	---	0.241
5		---	---	ND	---	0.241
6		---	---	ND	---	0.241
7		---	---	ND	---	0.241
8		---	---	ND	---	0.241
9		---	---	ND	---	0.241
10		---	---	ND	---	0.241
11		---	---	ND	---	2.37
12	12/13	---	---	ND	---	0.483
13	12/13	---	---	ND	---	0.483
14		---	---	ND	---	0.241
15		---	---	ND	---	0.241
16		---	---	ND	---	0.241
17		---	---	ND	---	0.241
18	18/30	---	---	ND	---	0.483
19		---	---	ND	---	0.241
20	20/28	---	---	ND	---	1.25
21	21/33	---	---	ND	---	1.30
22		---	---	ND	---	0.918
23		---	---	ND	---	0.241
24		---	---	ND	---	0.241
25		---	---	ND	---	0.241
26	26/29	---	---	ND	---	0.483
27		---	---	ND	---	0.241
28	20/28	---	---	ND	---	1.25
29	26/29	---	---	ND	---	0.483
30	18/30	---	---	ND	---	0.483
31		---	---	ND	---	1.26
32		---	---	ND	---	0.241
33	21/33	---	---	ND	---	1.30
34		---	---	ND	---	0.241
35		---	---	ND	---	0.241
36		---	---	ND	---	0.241
37		---	---	ND	---	0.512
38		---	---	ND	---	0.241
39		---	---	ND	---	0.241
40	40/41/71	---	---	ND	---	1.45
41	40/41/71	---	---	ND	---	1.45
42		---	---	ND	---	0.483
43	43/73	---	---	ND	---	0.483
44	44/47/65	---	---	ND	---	1.45
45	45/51	---	---	ND	---	0.966

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
46		---	---	ND	---	0.483
47	44/47/65	---	---	ND	---	1.45
48		---	---	ND	---	0.483
49	49/69	---	---	ND	---	0.966
50	50/53	---	---	ND	---	0.966
51	45/51	---	---	ND	---	0.966
52		---	---	ND	---	1.49
53	50/53	---	---	ND	---	0.966
54		---	---	ND	---	0.483
55		---	---	ND	---	0.483
56		---	---	ND	---	0.483
57		---	---	ND	---	0.483
58		---	---	ND	---	0.483
59	59/62/75	---	---	ND	---	1.45
60		---	---	ND	---	0.483
61	61/70/74/76	---	---	ND	---	1.93
62	59/62/75	---	---	ND	---	1.45
63		---	---	ND	---	0.483
64		---	---	ND	---	0.483
65	44/47/65	---	---	ND	---	1.45
66		---	---	ND	---	0.811
67		---	---	ND	---	0.483
68		---	---	ND	---	0.483
69	49/69	---	---	ND	---	0.966
70	61/70/74/76	---	---	ND	---	1.93
71	40/41/71	---	---	ND	---	1.45
72		---	---	ND	---	0.483
73	43/73	---	---	ND	---	0.483
74	61/70/74/76	---	---	ND	---	1.93
75	59/62/75	---	---	ND	---	1.45
76	61/70/74/76	---	---	ND	---	1.93
77		---	---	ND	---	0.483
78		---	---	ND	---	0.483
79		---	---	ND	---	0.483
80		---	---	ND	---	0.483
81		---	---	ND	---	0.483
82		---	---	ND	---	0.483
83		---	---	ND	---	0.483
84		---	---	ND	---	0.483
85	85/116/117	---	---	ND	---	1.45
86	86/87/97/108/119/125	---	---	ND	---	2.90
87	86/87/97/108/119/125	---	---	ND	---	2.90
88	88/91	---	---	ND	---	0.966
89		---	---	ND	---	0.483
90	90/101/113	---	---	ND	---	1.45

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
91	88/91	---	---	ND	---	0.966
92		---	---	ND	---	0.483
93	93/98/100/102	---	---	ND	---	1.93
94		---	---	ND	---	0.483
95		---	---	ND	---	0.918
96		---	---	ND	---	0.483
97	86/87/97/108/119/125	---	---	ND	---	2.90
98	93/98/100/102	---	---	ND	---	1.93
99		---	---	ND	---	0.483
100	93/98/100/102	---	---	ND	---	1.93
101	90/101/113	---	---	ND	---	1.45
102	93/98/100/102	---	---	ND	---	1.93
103		---	---	ND	---	0.483
104		---	---	ND	---	0.483
105		---	---	ND	---	0.483
106		---	---	ND	---	0.483
107	107/124	---	---	ND	---	0.966
108	86/87/97/108/119/125	---	---	ND	---	2.90
109		---	---	ND	---	0.483
110	110/115	---	---	ND	---	0.966
111		---	---	ND	---	0.483
112		---	---	ND	---	0.483
113	90/101/113	---	---	ND	---	1.45
114		---	---	ND	---	0.483
115	110/115	---	---	ND	---	0.966
116	85/116/117	---	---	ND	---	1.45
117	85/116/117	---	---	ND	---	1.45
118		---	---	ND	---	0.618
119	86/87/97/108/119/125	---	---	ND	---	2.90
120		---	---	ND	---	0.483
121		---	---	ND	---	0.483
122		---	---	ND	---	0.483
123		---	---	ND	---	0.483
124	107/124	---	---	ND	---	0.966
125	86/87/97/108/119/125	---	---	ND	---	2.90
126		---	---	ND	---	0.483
127		---	---	ND	---	0.483
128	128/166	---	---	ND	---	0.966
129	129/138/163	---	---	ND	---	1.45
130		---	---	ND	---	0.483
131		---	---	ND	---	0.483
132		---	---	ND	---	0.483
133		---	---	ND	---	0.483
134	134/143	---	---	ND	---	0.966
135	135/151	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
136		---	---	ND	---	0.483
137		---	---	ND	---	0.483
138	129/138/163	---	---	ND	---	1.45
139	139/140	---	---	ND	---	0.966
140	139/140	---	---	ND	---	0.966
141		---	---	ND	---	0.483
142		---	---	ND	---	0.483
143	134/143	---	---	ND	---	0.966
144		---	---	ND	---	0.483
145		---	---	ND	---	0.483
146		---	---	ND	---	0.483
147	147/149	---	---	ND	---	0.966
148		---	---	ND	---	0.483
149	147/149	---	---	ND	---	0.966
150		---	---	ND	---	0.483
151	135/151	---	---	ND	---	0.966
152		---	---	ND	---	0.483
153	153/168	---	---	ND	---	0.966
154		---	---	ND	---	0.483
155		---	---	ND	---	0.483
156	156/157	---	---	ND	---	0.966
157	156/157	---	---	ND	---	0.966
158		---	---	ND	---	0.483
159		---	---	ND	---	0.483
160		---	---	ND	---	0.483
161		---	---	ND	---	0.483
162		---	---	ND	---	0.483
163	129/138/163	---	---	ND	---	1.45
164		---	---	ND	---	0.483
165		---	---	ND	---	0.483
166	128/166	---	---	ND	---	0.966
167		---	---	ND	---	0.483
168	153/168	---	---	ND	---	0.966
169		---	---	ND	---	0.483
170		---	---	ND	---	0.483
171	171/173	---	---	ND	---	0.966
172		---	---	ND	---	0.483
173	171/173	---	---	ND	---	0.966
174		---	---	ND	---	0.483
175		---	---	ND	---	0.483
176		---	---	ND	---	0.483
177		---	---	ND	---	0.483
178		---	---	ND	---	0.483
179		---	---	ND	---	0.483
180	180/193	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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NA = Not Applicable
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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
181		---	---	ND	---	0.483
182		---	---	ND	---	0.483
183	183/185	---	---	ND	---	0.966
184		---	---	ND	---	0.483
185	183/185	---	---	ND	---	0.966
186		---	---	ND	---	0.483
187		---	---	ND	---	0.483
188		---	---	ND	---	0.483
189		---	---	ND	---	0.483
190		---	---	ND	---	0.483
191		---	---	ND	---	0.483
192		---	---	ND	---	0.483
193	180/193	---	---	ND	---	0.966
194		---	---	ND	---	0.724
195		---	---	ND	---	0.724
196		---	---	ND	---	0.724
197	197/200	---	---	ND	---	1.45
198	198/199	---	---	ND	---	1.45
199	198/199	---	---	ND	---	1.45
200	197/200	---	---	ND	---	1.45
201		---	---	ND	---	0.724
202		---	---	ND	---	0.724
203		---	---	ND	---	0.724
204		---	---	ND	---	0.724
205		---	---	ND	---	0.724
206		---	---	ND	---	0.724
207		---	---	ND	---	0.724
208		---	---	ND	---	0.724
209		---	---	ND	---	0.724

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKSY
Lab Sample ID	BLANK-63512
Filename	P180721B_06

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-63507		
Filename	P180723B_07		
Injected By	BAL	Matrix	Soil/Solid (QC Matrix)
Total Amount Extracted	10.7 g	Extracted	07/17/2018 15:00
ICAL ID	P180723B02	Analyzed	07/23/2018 23:24
CCal Filename(s)	P180723B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.576	2.72	2.0	1.23	62
13C-4-MoCB	3	12.427	3.20	2.0	1.14	57
13C-2,2'-DiCB	4	12.739	1.33	2.0	1.13	56
13C-4,4'-DiCB	15	19.903	1.58	2.0	1.39	69
13C-2,2',6-TrCB	19	16.608	1.07	2.0	1.40	70
13C-3,4,4'-TrCB	37	27.711	1.20	2.0	1.81	90
13C-2,2',6,6'-TeCB	54	20.215	0.74	2.0	1.36	68
13C-3,4,4',5-TeCB	81	34.827	0.73	2.0	1.54	77
13C-3,3',4,4'-TeCB	77	35.464	0.76	2.0	1.54	77
13C-2,2',4,6,6'-PeCB	104	26.302	1.63	2.0	1.35	68
13C-2,3,3',4,4'-PeCB	105	39.008	1.51	2.0	1.64	82
13C-2,3,4,4',5-PeCB	114	38.320	1.68	2.0	1.62	81
13C-2,3',4,4',5-PeCB	118	37.784	1.68	2.0	1.54	77
13C-2,3',4,4',5'-PeCB	123	37.432	1.51	2.0	1.63	81
13C-3,3',4,4',5-PeCB	126	42.178	1.54	2.0	1.88	94
13C-2,2',4,4',6,6'-HxCB	155	32.328	1.16	2.0	1.28	64
13C-HxCB (156/157)	156/157	45.218	1.23	4.0	2.86	71
13C-2,3',4,4',5,5'-HxCB	167	44.044	1.38	2.0	1.47	74
13C-3,3',4,4',5,5'-HxCB	169	48.556	1.25	2.0	1.60	80
13C-2,2',3,4',5,6,6'-HpCB	188	38.253	1.05	2.0	1.36	68
13C-2,3,3',4,4',5,5'-HpCB	189	51.050	1.00	2.0	1.50	75
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.726	0.89	2.0	1.48	74
13C-2,3,3',4,4',5,5',6-OcCB	205	53.098	0.93	2.0	1.45	73
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.520	0.74	2.0	1.62	81
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.489	0.81	2.0	1.56	78
13C--DeCB	209	55.986	0.73	2.0	1.57	78
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.301	1.01	2.0	1.59	80
13C-2,3,3',5,5'-PeCB	111	35.397	1.68	2.0	1.49	75
13C-2,2',3,3',5,5',6-HpCB	178	41.389	1.09	2.0	1.65	82
Recovery Standards						
13C-2,5-DiCB	9	15.229	1.58	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.280	0.84	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.597	1.58	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.970	1.31	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.731	0.87	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

Results reported on a total weight basis

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	23.4
2		---	---	ND	---	23.4
3		---	---	ND	---	23.4
4		---	---	ND	---	23.4
5		---	---	ND	---	23.4
6		---	---	ND	---	23.4
7		---	---	ND	---	23.4
8		---	---	ND	---	23.4
9		---	---	ND	---	23.4
10		---	---	ND	---	23.4
11		---	---	ND	---	229
12	12/13	---	---	ND	---	46.7
13	12/13	---	---	ND	---	46.7
14		---	---	ND	---	23.4
15		---	---	ND	---	23.4
16		---	---	ND	---	23.4
17		---	---	ND	---	23.4
18	18/30	---	---	ND	---	46.7
19		---	---	ND	---	23.4
20	20/28	---	---	ND	---	121
21	21/33	---	---	ND	---	126
22		---	---	ND	---	88.8
23		---	---	ND	---	23.4
24		---	---	ND	---	23.4
25		---	---	ND	---	23.4
26	26/29	---	---	ND	---	46.7
27		---	---	ND	---	23.4
28	20/28	---	---	ND	---	121
29	26/29	---	---	ND	---	46.7
30	18/30	---	---	ND	---	46.7
31		---	---	ND	---	121
32		---	---	ND	---	23.4
33	21/33	---	---	ND	---	126
34		---	---	ND	---	23.4
35		---	---	ND	---	23.4
36		---	---	ND	---	23.4
37		---	---	ND	---	49.5
38		---	---	ND	---	23.4
39		---	---	ND	---	23.4
40	40/41/71	---	---	ND	---	140
41	40/41/71	---	---	ND	---	140
42		---	---	ND	---	46.7
43	43/73	---	---	ND	---	46.7
44	44/47/65	---	---	ND	---	140
45	45/51	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
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R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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Results reported on a total weight basis

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46		---	---	ND	---	46.7
47	44/47/65	---	---	ND	---	140
48		---	---	ND	---	46.7
49	49/69	---	---	ND	---	93.5
50	50/53	---	---	ND	---	93.5
51	45/51	---	---	ND	---	93.5
52		---	---	ND	---	144
53	50/53	---	---	ND	---	93.5
54		---	---	ND	---	46.7
55		---	---	ND	---	46.7
56		---	---	ND	---	46.7
57		---	---	ND	---	46.7
58		---	---	ND	---	46.7
59	59/62/75	---	---	ND	---	140
60		---	---	ND	---	46.7
61	61/70/74/76	---	---	ND	---	187
62	59/62/75	---	---	ND	---	140
63		---	---	ND	---	46.7
64		---	---	ND	---	46.7
65	44/47/65	---	---	ND	---	140
66		---	---	ND	---	78.5
67		---	---	ND	---	46.7
68		---	---	ND	---	46.7
69	49/69	---	---	ND	---	93.5
70	61/70/74/76	---	---	ND	---	187
71	40/41/71	---	---	ND	---	140
72		---	---	ND	---	46.7
73	43/73	---	---	ND	---	46.7
74	61/70/74/76	---	---	ND	---	187
75	59/62/75	---	---	ND	---	140
76	61/70/74/76	---	---	ND	---	187
77		---	---	ND	---	46.7
78		---	---	ND	---	46.7
79		---	---	ND	---	46.7
80		---	---	ND	---	46.7
81		---	---	ND	---	46.7
82		---	---	ND	---	46.7
83		---	---	ND	---	46.7
84		---	---	ND	---	46.7
85	85/116/117	---	---	ND	---	140
86	86/87/97/108/119/125	---	---	ND	---	280
87	86/87/97/108/119/125	---	---	ND	---	280
88	88/91	---	---	ND	---	93.5
89		---	---	ND	---	46.7
90	90/101/113	---	---	ND	---	140

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
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B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91	---	---	ND	---	93.5
92		---	---	ND	---	46.7
93	93/98/100/102	---	---	ND	---	187
94		---	---	ND	---	46.7
95		---	---	ND	---	88.8
96		---	---	ND	---	46.7
97	86/87/97/108/119/125	---	---	ND	---	280
98	93/98/100/102	---	---	ND	---	187
99		---	---	ND	---	46.7
100	93/98/100/102	---	---	ND	---	187
101	90/101/113	---	---	ND	---	140
102	93/98/100/102	---	---	ND	---	187
103		---	---	ND	---	46.7
104		---	---	ND	---	46.7
105		---	---	ND	---	46.7
106		---	---	ND	---	46.7
107	107/124	---	---	ND	---	93.5
108	86/87/97/108/119/125	---	---	ND	---	280
109		---	---	ND	---	46.7
110	110/115	---	---	ND	---	93.5
111		---	---	ND	---	46.7
112		---	---	ND	---	46.7
113	90/101/113	---	---	ND	---	140
114		---	---	ND	---	46.7
115	110/115	---	---	ND	---	93.5
116	85/116/117	---	---	ND	---	140
117	85/116/117	---	---	ND	---	140
118		---	---	ND	---	59.8
119	86/87/97/108/119/125	---	---	ND	---	280
120		---	---	ND	---	46.7
121		---	---	ND	---	46.7
122		---	---	ND	---	46.7
123		---	---	ND	---	46.7
124	107/124	---	---	ND	---	93.5
125	86/87/97/108/119/125	---	---	ND	---	280
126		---	---	ND	---	46.7
127		---	---	ND	---	46.7
128	128/166	---	---	ND	---	93.5
129	129/138/163	---	---	ND	---	140
130		---	---	ND	---	46.7
131		---	---	ND	---	46.7
132		---	---	ND	---	46.7
133		---	---	ND	---	46.7
134	134/143	---	---	ND	---	93.5
135	135/151	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

Results reported on a total weight basis

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136		---	---	ND	---	46.7
137		---	---	ND	---	46.7
138	129/138/163	---	---	ND	---	140
139	139/140	---	---	ND	---	93.5
140	139/140	---	---	ND	---	93.5
141		---	---	ND	---	46.7
142		---	---	ND	---	46.7
143	134/143	---	---	ND	---	93.5
144		---	---	ND	---	46.7
145		---	---	ND	---	46.7
146		---	---	ND	---	46.7
147	147/149	---	---	ND	---	93.5
148		---	---	ND	---	46.7
149	147/149	---	---	ND	---	93.5
150		---	---	ND	---	46.7
151	135/151	---	---	ND	---	93.5
152		---	---	ND	---	46.7
153	153/168	---	---	ND	---	93.5
154		---	---	ND	---	46.7
155		---	---	ND	---	46.7
156	156/157	---	---	ND	---	93.5
157	156/157	---	---	ND	---	93.5
158		---	---	ND	---	46.7
159		---	---	ND	---	46.7
160		---	---	ND	---	46.7
161		---	---	ND	---	46.7
162		---	---	ND	---	46.7
163	129/138/163	---	---	ND	---	140
164		---	---	ND	---	46.7
165		---	---	ND	---	46.7
166	128/166	---	---	ND	---	93.5
167		---	---	ND	---	46.7
168	153/168	---	---	ND	---	93.5
169		---	---	ND	---	46.7
170		---	---	ND	---	46.7
171	171/173	---	---	ND	---	93.5
172		---	---	ND	---	46.7
173	171/173	---	---	ND	---	93.5
174		---	---	ND	---	46.7
175		---	---	ND	---	46.7
176		---	---	ND	---	46.7
177		---	---	ND	---	46.7
178		---	---	ND	---	46.7
179		---	---	ND	---	46.7
180	180/193	---	---	ND	---	93.5

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
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Results reported on a total weight basis

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63507
Filename P180723B_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
181		---	---	ND	---	46.7
182		---	---	ND	---	46.7
183	183/185	---	---	ND	---	93.5
184		---	---	ND	---	46.7
185	183/185	---	---	ND	---	93.5
186		---	---	ND	---	46.7
187		---	---	ND	---	46.7
188		---	---	ND	---	46.7
189		---	---	ND	---	46.7
190		---	---	ND	---	46.7
191		---	---	ND	---	46.7
192		---	---	ND	---	46.7
193	180/193	---	---	ND	---	93.5
194		---	---	ND	---	70.1
195		---	---	ND	---	70.1
196		---	---	ND	---	70.1
197	197/200	---	---	ND	---	140
198	198/199	---	---	ND	---	140
199	198/199	---	---	ND	---	140
200	197/200	---	---	ND	---	140
201		---	---	ND	---	70.1
202		---	---	ND	---	70.1
203		---	---	ND	---	70.1
204		---	---	ND	---	70.1
205		---	---	ND	---	70.1
206		---	---	ND	---	70.1
207		---	---	ND	---	70.1
208		---	---	ND	---	70.1
209		---	---	ND	---	70.1

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
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Results reported on a total weight basis

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKSW
Lab Sample ID	BLANK-63507
Filename	P180723B_07

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a total weight basis

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-63513		
Filename	P180721B_03	Matrix	Water (QC Matrix)
Total Amount Extracted	945 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 19:55
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	0.996	100	2.0	0.992	50
3	1.0	0.978	98	2.0	1.06	53
4	1.0	1.07	107	2.0	0.945	47
15	1.0	1.03	103	2.0	1.12	56
19	1.0	0.953	95	2.0	1.07	53
37	1.0	0.813	81	2.0	1.35	68
54	1.0	0.932	93	2.0	0.963	48
81	1.0	0.870	87	2.0	1.45	73
77	1.0	0.928	93	2.0	1.35	67
104	1.0	0.985	98	2.0	0.926	46
105	1.0	0.923	92	2.0	1.37	69
114	1.0	1.01	101	2.0	1.32	66
118	1.0	0.968	97	2.0	1.36	68
123	1.0	0.959	96	2.0	1.33	67
126	1.0	0.977	98	2.0	1.43	72
155	1.0	0.921	92	2.0	0.950	48
156/157	2.0	1.86	93	4.0	2.54	63
167	1.0	0.954	95	2.0	1.24	62
169	1.0	0.944	94	2.0	1.43	71
188	1.0	1.00	100	2.0	0.960	48
189	1.0	1.01	101	2.0	1.30	65
202	1.0	0.991	99	2.0	1.00	50
205	1.0	1.03	103	2.0	1.20	60
206	1.0	1.03	103	2.0	1.13	56
208	1.0	0.993	99	2.0	1.06	53
209	1.0	1.05	105	2.0	1.08	54

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-63508		
Filename	P180723B_03	Matrix	Soil/Solid (QC Matrix)
Total Amount Extracted	10.0 g	Dilution	NA
ICAL ID	P180723B02	Extracted	07/17/2018 15:00
CCal Filename(s)	P180723B_01	Analyzed	07/23/2018 19:25
Method Blank ID	BLANK-63507	Injected By	BAL

	Native Analytes				Labeled Analytes		
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery		Spiked (ng)	Found (ng)	% Recovery
1	1.0	0.926	93		2.0	1.17	58
3	1.0	0.991	99		2.0	1.12	56
4	1.0	0.964	125	I	2.0	1.16	58
15	1.0	0.831	83		2.0	1.26	63
19	1.0	0.658	73	I	2.0	1.58	79
37	1.0	0.769	77		2.0	1.33	66
54	1.0	0.764	76		2.0	1.21	61
81	1.0	0.931	93		2.0	1.30	65
77	1.0	0.847	85		2.0	1.35	68
104	1.0	0.979	98		2.0	1.13	56
105	1.0	0.984	98		2.0	1.44	72
114	1.0	0.845	92	I	2.0	1.40	70
118	1.0	0.916	92		2.0	1.42	71
123	1.0	1.04	104		2.0	1.43	72
126	1.0	0.963	96		2.0	1.58	79
155	1.0	0.962	96		2.0	1.10	55
156/157	2.0	1.95	98		4.0	2.68	67
167	1.0	0.973	97		2.0	1.29	64
169	1.0	0.925	93		2.0	1.62	81
188	1.0	0.948	95		2.0	1.13	56
189	1.0	0.902	90		2.0	1.48	74
202	1.0	0.922	92		2.0	1.25	63
205	1.0	1.07	107		2.0	1.41	71
206	1.0	1.04	104		2.0	1.37	69
208	1.0	1.01	101		2.0	1.32	66
209	1.0	0.974	97		2.0	1.45	72

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
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ng = Nanograms
I = Interference

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-63514		
Filename	P180721B_04	Matrix	Water (QC Matrix)
Total Amount Extracted	959 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 20:54
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.04	104	2.0	1.11	55	
3	1.0	1.04	104	2.0	1.12	56	
4	1.0	1.13	113	2.0	0.983	49	
15	1.0	1.09	109	2.0	1.15	57	
19	1.0	0.903	90	2.0	1.23	61	
37	1.0	0.939	94	2.0	1.11	63	I
54	1.0	0.903	90	2.0	1.04	52	
81	1.0	0.914	91	2.0	1.44	72	
77	1.0	0.968	97	2.0	1.33	67	
104	1.0	0.991	99	2.0	1.00	50	
105	1.0	1.01	101	2.0	1.41	71	
114	1.0	1.02	102	2.0	1.42	71	
118	1.0	0.938	94	2.0	1.45	73	
123	1.0	0.953	95	2.0	1.45	72	
126	1.0	0.969	97	2.0	1.56	78	
155	1.0	1.04	104	2.0	0.987	49	
156/157	2.0	2.03	102	4.0	2.67	67	
167	1.0	0.986	99	2.0	1.36	68	
169	1.0	0.931	93	2.0	1.49	74	
188	1.0	1.01	101	2.0	1.13	56	
189	1.0	0.995	100	2.0	1.51	75	
202	1.0	0.961	96	2.0	1.19	60	
205	1.0	1.02	102	2.0	1.33	67	
206	1.0	1.07	107	2.0	1.26	63	
208	1.0	0.921	92	2.0	1.27	63	
209	1.0	0.944	94	2.0	1.20	60	

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
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Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-63509		
Filename	P180723B_04	Matrix	Solid
Total Amount Extracted	10.1 g	Dilution	NA
ICAL ID	P180723B02	Extracted	07/17/2018 15:00
CCal Filename(s)	P180723B_01	Analyzed	07/23/2018 20:25
Method Blank ID	BLANK-63507	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.04	104	2.0	1.18	59	
3	1.0	0.920	92	2.0	1.30	65	
4	1.0	1.00	100	2.0	1.40	70	
15	1.0	1.04	104	2.0	1.47	74	
19	1.0	0.719	72	2.0	1.97	98	
37	1.0	0.714	71	2.0	1.56	87	I
54	1.0	0.901	90	2.0	1.34	67	
81	1.0	0.842	84	2.0	1.50	75	
77	1.0	0.816	82	2.0	1.66	83	
104	1.0	1.02	102	2.0	1.38	69	
105	1.0	0.987	99	2.0	1.69	84	
114	1.0	0.953	95	2.0	1.61	80	
118	1.0	0.933	93	2.0	1.62	81	
123	1.0	0.940	94	2.0	1.61	81	
126	1.0	0.866	87	2.0	1.96	98	
155	1.0	0.919	92	2.0	1.38	69	
156/157	2.0	1.80	90	4.0	3.16	79	
167	1.0	0.933	93	2.0	1.60	80	
169	1.0	0.949	95	2.0	1.73	86	
188	1.0	1.05	105	2.0	1.41	71	
189	1.0	0.888	89	2.0	1.71	85	
202	1.0	0.972	97	2.0	1.64	82	
205	1.0	1.02	102	2.0	1.60	80	
206	1.0	0.987	99	2.0	1.63	82	
208	1.0	1.01	101	2.0	1.64	82	
209	1.0	1.01	101	2.0	1.76	88	

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63513	Spike 2 ID	LCSD-63514
Spike 1 Filename	P180721B_03	Spike 2 Filename	P180721B_04

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	100	104	3.9
4-MoCB	3	98	104	5.9
2,2'-DiCB	4	107	113	5.5
4,4'-DiCB	15	103	109	5.7
2,2',6-TrCB	19	95	90	5.4
3,4,4'-TrCB	37	81	94	14.9
2,2',6,6'-TeCB	54	93	90	3.3
3,3',4,4'-TeCB	77	93	97	4.2
3,4,4',5-TeCB	81	87	91	4.5
2,2',4,6,6'-PeCB	104	98	99	1.0
2,3,3',4,4'-PeCB	105	92	101	9.3
2,3,4,4',5-PeCB	114	101	102	1.0
2,3',4,4',5-PeCB	118	97	94	3.1
2,3',4,4',5'-PeCB	123	96	95	1.0
3,3',4,4',5-PeCB	126	98	97	1.0
2,2',4,4',6,6'-HxCB	155	92	104	12.2
(156/157)	156/157	93	102	9.2
2,3',4,4',5,5'-HxCB	167	95	99	4.1
3,3',4,4',5,5'-HxCB	169	94	93	1.1
2,2',3,4',5,6,6'-HpCB	188	100	101	1.0
2,3,3',4,4',5,5'-HpCB	189	101	100	1.0
2,2',3,3',5,5',6,6'-OcCB	202	99	96	3.1
2,3,3',4,4',5,5',6-OcCB	205	103	102	1.0
2,2',3,3',4,4',5,5',6-NoCB	206	103	107	3.8
2,2',3,3',4,5,5',6,6'-NoCB	208	99	92	7.3
Decachlorobiphenyl	209	105	94	11.1

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63508	Spike 2 ID	LCSD-63509
Spike 1 Filename	P180723B_03	Spike 2 Filename	P180723B_04

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	93	104	11.2
4-MoCB	3	99	92	7.3
2,2'-DiCB	4	125	100	22.2
4,4'-DiCB	15	83	104	22.5
2,2',6-TrCB	19	73	72	1.4
3,4,4'-TrCB	37	77	71	8.1
2,2',6,6'-TeCB	54	76	90	16.9
3,3',4,4'-TeCB	77	85	82	3.6
3,4,4',5-TeCB	81	93	84	10.2
2,2',4,6,6'-PeCB	104	98	102	4.0
2,3,3',4,4'-PeCB	105	98	99	1.0
2,3,4,4',5-PeCB	114	92	95	3.2
2,3',4,4',5-PeCB	118	92	93	1.1
2,3',4,4',5'-PeCB	123	104	94	10.1
3,3',4,4',5-PeCB	126	96	87	9.8
2,2',4,4',6,6'-HxCB	155	96	92	4.3
(156/157)	156/157	98	90	8.5
2,3',4,4',5,5'-HxCB	167	97	93	4.2
3,3',4,4',5,5'-HxCB	169	93	95	2.1
2,2',3,4',5,6,6'-HpCB	188	95	105	10.0
2,3,3',4,4',5,5'-HpCB	189	90	89	1.1
2,2',3,3',5,5',6,6'-OcCB	202	92	97	5.3
2,3,3',4,4',5,5',6-OcCB	205	107	102	4.8
2,2',3,3',4,4',5,5',6-NoCB	206	104	99	4.9
2,2',3,3',4,5,5',6,6'-NoCB	208	101	101	0.0
Decachlorobiphenyl	209	97	101	4.0

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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(704)875-9092

July 27, 2018

Michael W. Worden
Environeering, Inc.
16100 Cairnway
Suite 320
Houston, TX 77084

RE: Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Dear Michael Worden:
Enclosed are the analytical results for sample(s) received by the laboratory on July 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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CERTIFICATIONS

Project:	Eastern Drainage Ditch - SW
Pace Project No.:	92391628

Grand Rapids Certification ID's

5560 Corporate Exchange Ct SE, Grand Rapids, MI 49512
Minnesota Department of Health, Certificate #1385941
Arkansas Department of Environmental Quality, Certificate #18-046-0
Georgia Environmental Protection Division, Stipulation
Illinois Environmental Protection Agency, Certificate #004325
Michigan Department of Environmental Quality, Laboratory #0034
New York State Department of Health, Serial #57971 and 57972
North Carolina Division of Water Resources, Certificate #659
Virginia Department of General Services, Certificate #9780
Wisconsin Department of Natural Resources, Laboratory #999472650
U.S. Department of Agriculture Permit to Receive Soil, Permit #P330-17-00278

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92391628001	**ABL-SW013-F005**	Water	07/11/18 13:25	07/11/18 16:35
92391628002	**ABL-SW014-F005**	Water	07/11/18 12:50	07/11/18 16:35
92391628003	**ABL-SW015-F005**	Water	07/11/18 12:20	07/11/18 16:35

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SAMPLE ANALYTE COUNT

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92391628001	**ABL-SW013-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	RES	20	PASI-C
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
		OIA1677	IDT	1	PASI-GRMI
92391628002	**ABL-SW014-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	RES	20	PASI-C
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
		OIA1677	IDT	1	PASI-GRMI
92391628003	**ABL-SW015-F005**	EPA 8082A	NU1	8	PASI-C
		EPA 8270D by SIM	RES	20	PASI-C
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 9012B	CJH1	1	PASI-A
		OIA1677	IDT	1	PASI-GRMI

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Sample: ABL-SW013-F005 **Lab ID: 92391628001** Collected: 07/11/18 13:25 Received: 07/11/18 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:18	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	60	%	10-132		1	07/12/18 19:40	07/16/18 19:18	2051-24-3	
8270 SPLP SIM PAH Low Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3511 Leachate Method/Date: EPA 1312; 07/19/18 10:52								
Acenaphthene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 17:13	83-32-9	
Acenaphthylene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 17:13	208-96-8	
Anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:13	207-08-9	
Chrysene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.15	0.15	1	07/20/18 07:40	07/20/18 17:13	53-70-3	
Fluoranthene	ND	ug/L	0.30	0.30	1	07/20/18 07:40	07/20/18 17:13	206-44-0	
Fluorene	ND	ug/L	0.31	0.31	1	07/20/18 07:40	07/20/18 17:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:13	193-39-5	
1-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 17:13	90-12-0	
2-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 17:13	91-57-6	
Naphthalene	ND	ug/L	1.5	1.5	1	07/20/18 07:40	07/20/18 17:13	91-20-3	
Phenanthrene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:13	85-01-8	
Pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:13	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	110	%	70-130		1	07/20/18 07:40	07/20/18 17:13	4165-60-0	
2-Fluorobiphenyl (S)	79	%	70-130		1	07/20/18 07:40	07/20/18 17:13	321-60-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**1.2**	mg/L	0.10	0.050	1		07/19/18 20:01	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.064**	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:20	57-12-5	
OIA1677 Cyanide, Available	Analytical Method: OIA1677								
Available Cyanide	**3.4**	ug/L	2.0	0.30	1		07/17/18 13:27		

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Sample: ABL-SW014-F005 **Lab ID: 92391628002** Collected: 07/11/18 12:50 Received: 07/11/18 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.42	0.42	1	07/12/18 19:40	07/16/18 19:30	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	50	%	10-132		1	07/12/18 19:40	07/16/18 19:30	2051-24-3	
8270 SPLP SIM PAH Low Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3511 Leachate Method/Date: EPA 1312; 07/19/18 10:52								
Acenaphthene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 17:55	83-32-9	
Acenaphthylene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 17:55	208-96-8	
Anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:55	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:55	207-08-9	
Chrysene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.15	0.15	1	07/20/18 07:40	07/20/18 17:55	53-70-3	
Fluoranthene	ND	ug/L	0.30	0.30	1	07/20/18 07:40	07/20/18 17:55	206-44-0	
Fluorene	ND	ug/L	0.31	0.31	1	07/20/18 07:40	07/20/18 17:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 17:55	193-39-5	
1-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 17:55	90-12-0	
2-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 17:55	91-57-6	
Naphthalene	ND	ug/L	1.5	1.5	1	07/20/18 07:40	07/20/18 17:55	91-20-3	
Phenanthrene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 17:55	85-01-8	
Pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 17:55	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	115	%	70-130		1	07/20/18 07:40	07/20/18 17:55	4165-60-0	
2-Fluorobiphenyl (S)	85	%	70-130		1	07/20/18 07:40	07/20/18 17:55	321-60-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**2.2**	mg/L	0.10	0.050	1		07/19/18 20:55	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.051**	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:23	57-12-5	
OIA1677 Cyanide, Available	Analytical Method: OIA1677								
Available Cyanide	**3.8**	ug/L	2.0	0.30	1		07/17/18 13:31		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Sample: ABL-SW015-F005 **Lab ID: 92391628003** Collected: 07/11/18 12:20 Received: 07/11/18 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB RVE	Analytical Method: EPA 8082A Preparation Method: EPA 3510C								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	07/12/18 19:40	07/16/18 19:43	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	45	%	10-132		1	07/12/18 19:40	07/16/18 19:43	2051-24-3	
8270 SPLP SIM PAH Low Volume	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3511 Leachate Method/Date: EPA 1312; 07/19/18 10:52								
Acenaphthene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 18:16	83-32-9	
Acenaphthylene	ND	ug/L	0.50	0.50	1	07/20/18 07:40	07/20/18 18:16	208-96-8	
Anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 18:16	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 18:16	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 18:16	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 18:16	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 18:16	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 18:16	207-08-9	
Chrysene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 18:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.15	0.15	1	07/20/18 07:40	07/20/18 18:16	53-70-3	
Fluoranthene	ND	ug/L	0.30	0.30	1	07/20/18 07:40	07/20/18 18:16	206-44-0	
Fluorene	ND	ug/L	0.31	0.31	1	07/20/18 07:40	07/20/18 18:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.050	0.050	1	07/20/18 07:40	07/20/18 18:16	193-39-5	
1-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 18:16	90-12-0	
2-Methylnaphthalene	ND	ug/L	2.0	2.0	1	07/20/18 07:40	07/20/18 18:16	91-57-6	
Naphthalene	ND	ug/L	1.5	1.5	1	07/20/18 07:40	07/20/18 18:16	91-20-3	
Phenanthrene	ND	ug/L	0.20	0.20	1	07/20/18 07:40	07/20/18 18:16	85-01-8	
Pyrene	ND	ug/L	0.10	0.10	1	07/20/18 07:40	07/20/18 18:16	129-00-0	
Surrogates									
Nitrobenzene-d5 (S)	101	%	70-130		1	07/20/18 07:40	07/20/18 18:16	4165-60-0	
2-Fluorobiphenyl (S)	75	%	70-130		1	07/20/18 07:40	07/20/18 18:16	321-60-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**6.0**	mg/L	0.20	0.10	2		07/19/18 21:13	16984-48-8	
9012B Cyanide, Total	Analytical Method: EPA 9012B Preparation Method: EPA 9012B								
Cyanide	**0.014**	mg/L	0.0080	0.0040	1	07/17/18 11:15	07/17/18 15:24	57-12-5	
OIA1677 Cyanide, Available	Analytical Method: OIA1677								
Available Cyanide	**0.80J**	ug/L	2.0	0.30	1		07/17/18 13:32		

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

QC Batch: 418714 | Analysis Method: EPA 8082A
QC Batch Method: EPA 3510C | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92391628001, 92391628002, 92391628003

METHOD BLANK: 2321052 | Matrix: Water
Associated Lab Samples: 92391628001, 92391628002, 92391628003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	07/16/18 23:33	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	07/16/18 23:33	
Decachlorobiphenyl (S)	%	73	10-132		07/16/18 23:33	

LABORATORY CONTROL SAMPLE & LCSD: 2321053 2321054

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.6	3.4	72	68	50-150	6	30	
PCB-1260 (Aroclor 1260)	ug/L	5	4.0	3.7	80	74	50-150	9	30	
Decachlorobiphenyl (S)	%				76	81	10-132			

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

QC Batch: 420210 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3511 | Analysis Description: 8270 SPLP SIM PAH Low Volume
Associated Lab Samples: 92391628001, 92391628002, 92391628003

METHOD BLANK: 2328166 | Matrix: Water
Associated Lab Samples: 92391628001, 92391628002, 92391628003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	2.0	2.0	07/20/18 15:49	
2-Methylnaphthalene	ug/L	ND	2.0	2.0	07/20/18 15:49	
Acenaphthene	ug/L	ND	0.50	0.50	07/20/18 15:49	
Acenaphthylene	ug/L	ND	0.50	0.50	07/20/18 15:49	
Anthracene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(a)anthracene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(a)pyrene	ug/L	ND	0.10	0.10	07/20/18 15:49	
Benzo(b)fluoranthene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Benzo(g,h,i)perylene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Benzo(k)fluoranthene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Chrysene	ug/L	ND	0.10	0.10	07/20/18 15:49	
Dibenz(a,h)anthracene	ug/L	ND	0.15	0.15	07/20/18 15:49	
Fluoranthene	ug/L	ND	0.30	0.30	07/20/18 15:49	
Fluorene	ug/L	ND	0.31	0.31	07/20/18 15:49	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	0.050	07/20/18 15:49	
Naphthalene	ug/L	ND	1.5	1.5	07/20/18 15:49	
Phenanthrene	ug/L	ND	0.20	0.20	07/20/18 15:49	
Pyrene	ug/L	ND	0.10	0.10	07/20/18 15:49	
2-Fluorobiphenyl (S)	%	77	70-130		07/20/18 15:49	
Nitrobenzene-d5 (S)	%	94	70-130		07/20/18 15:49	

LABORATORY CONTROL SAMPLE: 2328167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	2.5	2.4	94	70-130	
2-Methylnaphthalene	ug/L	2.5	2.3	91	70-130	
Acenaphthene	ug/L	2.5	2.5	99	70-130	
Acenaphthylene	ug/L	2.5	2.4	95	70-130	
Anthracene	ug/L	2.5	2.6	103	70-130	
Benzo(a)anthracene	ug/L	2.5	2.4	98	70-130	
Benzo(a)pyrene	ug/L	2.5	2.5	100	70-130	
Benzo(b)fluoranthene	ug/L	2.5	2.4	95	70-130	
Benzo(g,h,i)perylene	ug/L	2.5	2.3	94	70-130	
Benzo(k)fluoranthene	ug/L	2.5	2.4	97	70-130	
Chrysene	ug/L	2.5	2.7	107	70-130	
Dibenz(a,h)anthracene	ug/L	2.5	2.5	101	70-130	
Fluoranthene	ug/L	2.5	2.5	102	70-130	
Fluorene	ug/L	2.5	2.5	99	70-130	
Indeno(1,2,3-cd)pyrene	ug/L	2.5	2.6	106	70-130	
Naphthalene	ug/L	2.5	2.0	82	70-130	

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REPORT OF LABORATORY ANALYSIS

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

LABORATORY CONTROL SAMPLE: 2328167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	2.5	2.4	95	70-130	
Pyrene	ug/L	2.5	2.5	100	70-130	
2-Fluorobiphenyl (S)	%			79	70-130	
Nitrobenzene-d5 (S)	%			107	70-130	

MATRIX SPIKE SAMPLE: 2328168

Parameter	Units	92391608004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	ND	2.5	2.8	113	70-130	
2-Methylnaphthalene	ug/L	ND	2.5	2.8	111	70-130	
Acenaphthene	ug/L	ND	2.5	3.0	120	70-130	
Acenaphthylene	ug/L	ND	2.5	2.9	117	70-130	
Anthracene	ug/L	ND	2.5	3.2	126	70-130	
Benzo(a)anthracene	ug/L	ND	2.5	2.8	113	70-130	
Benzo(a)pyrene	ug/L	ND	2.5	2.8	113	70-130	
Benzo(b)fluoranthene	ug/L	ND	2.5	2.8	111	70-130	
Benzo(g,h,i)perylene	ug/L	ND	2.5	2.6	104	70-130	
Benzo(k)fluoranthene	ug/L	ND	2.5	2.7	109	70-130	
Chrysene	ug/L	ND	2.5	3.1	126	70-130	
Dibenz(a,h)anthracene	ug/L	ND	2.5	2.8	112	70-130	
Fluoranthene	ug/L	ND	2.5	3.0	119	70-130	
Fluorene	ug/L	ND	2.5	3.0	122	70-130	
Indeno(1,2,3-cd)pyrene	ug/L	ND	2.5	2.9	115	70-130	
Naphthalene	ug/L	ND	2.5	2.5	98	70-130	
Phenanthrene	ug/L	ND	2.5	2.9	114	70-130	
Pyrene	ug/L	ND	2.5	2.9	117	70-130	
2-Fluorobiphenyl (S)	%				84	70-130	
Nitrobenzene-d5 (S)	%				115	70-130	

SAMPLE DUPLICATE: 2328169

Parameter	Units	92391628001 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	
Benzo(k)fluoranthene	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

SAMPLE DUPLICATE: 2328169

Parameter	Units	92391628001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
2-Fluorobiphenyl (S)	%	79	85	7		
Nitrobenzene-d5 (S)	%	110	109	1		

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

QC Batch: 419979 | Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92391628001, 92391628002, 92391628003

METHOD BLANK: 2327124 | Matrix: Water
Associated Lab Samples: 92391628001, 92391628002, 92391628003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	07/19/18 14:53	

LABORATORY CONTROL SAMPLE: 2327125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2327126 2327127

Parameter	Units	92392394001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.13	2.5	2.5	2.6	2.8	99	106	90-110	7	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2327128 2327129

Parameter	Units	92391628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	1.2	2.5	2.5	3.7	3.8	98	101	90-110	2	10	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

QC Batch: 419425 | Analysis Method: EPA 9012B
QC Batch Method: EPA 9012B | Analysis Description: EPA 9012B Cyanide
Associated Lab Samples: 92391628001, 92391628002, 92391628003

METHOD BLANK: 2324546 | Matrix: Water
Associated Lab Samples: 92391628001, 92391628002, 92391628003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	0.0040	07/17/18 15:18	

LABORATORY CONTROL SAMPLE: 2324547

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.092	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324548 2324549

Parameter	Units	92391628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.064	.1	.1	0.15	0.15	87	90	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2324550 2324551

Parameter	Units	92391634008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.095	0.092	95	92	75-125	3	20	

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QUALITY CONTROL DATA

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

QC Batch: 28260 | Analysis Method: OIA1677
QC Batch Method: OIA1677 | Analysis Description: OIA1677 Cyanide, Available
Associated Lab Samples: 92391628001, 92391628002, 92391628003

METHOD BLANK: 112956 | Matrix: Water
Associated Lab Samples: 92391628001, 92391628002, 92391628003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Available Cyanide	ug/L	ND	2.0	0.30	07/17/18 13:25	

LABORATORY CONTROL SAMPLE: 112957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Available Cyanide	ug/L	20	19.4	97	82-132	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 112958 112959

Parameter	Units	92391628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Available Cyanide	ug/L	3.4	20	20	23.4	24.1	100	103	82-130	3	11	

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-GRMI	Pace Analytical - Grand Rapids

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(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Eastern Drainage Ditch - SW
Pace Project No.: 92391628

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92391628001	**ABL-SW013-F005**	EPA 3510C	418714	EPA 8082A	419331
92391628002	**ABL-SW014-F005**	EPA 3510C	418714	EPA 8082A	419331
92391628003	**ABL-SW015-F005**	EPA 3510C	418714	EPA 8082A	419331
92391628001	**ABL-SW013-F005**	EPA 3511	420210	EPA 8270D by SIM	420315
92391628002	**ABL-SW014-F005**	EPA 3511	420210	EPA 8270D by SIM	420315
92391628003	**ABL-SW015-F005**	EPA 3511	420210	EPA 8270D by SIM	420315
92391628001	**ABL-SW013-F005**	EPA 300.0 Rev 2.1 1993	419979		
92391628002	**ABL-SW014-F005**	EPA 300.0 Rev 2.1 1993	419979		
92391628003	**ABL-SW015-F005**	EPA 300.0 Rev 2.1 1993	419979		
92391628001	**ABL-SW013-F005**	EPA 9012B	419425	EPA 9012B	419520
92391628002	**ABL-SW014-F005**	EPA 9012B	419425	EPA 9012B	419520
92391628003	**ABL-SW015-F005**	EPA 9012B	419425	EPA 9012B	419520
92391628001	**ABL-SW013-F005**	OIA1677	28260		
92391628002	**ABL-SW014-F005**	OIA1677	28260		
92391628003	**ABL-SW015-F005**	OIA1677	28260		

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Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: Environmental

Project #: WO#: 92391628

92391628

Courier: ☐ Commercial ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: CDK 7/12/18

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☑ No ☐ N/A

Thermometer: ☑ IR Gun ID: 92T040

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 2.3 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 2.7

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: JCP **Date:** 07/12/18

Project Manager SRF Review: NMG **Date:** 7/12/18

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO#:92391628

PM: NMG Due Date: 07/26/18

CLIENT: 92-Alcoa

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	1677 - Free Cl	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1		1						✓ 1		2														7		2		3
2		1						✓ 1		2														7		2		3
3		1						✓ 1		2														7		2		3
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Environeering
Address:	138 Fort Jackson Road
Morrisville, NC 27560	
Email:	M. WORDEN
Phone:	Fax
Requested Due Date:	STD

Section B
Required Project Information:

Report To:	Michael Worden
Copy To:	
Purchase Order #:	
Project Name:	Eastern Drainage Ditch - SW
Project #:	137.7603

Section C
Invoice Information:

Attention:	
Company Name:	ENVIRONTECH
Address:	HOUSTON TX
Pace Quote:	
Pace Project Manager:	nicole.gasiorowski@pacelabs.com,
Pace Profile #:	7478

Regulatory Agency	
State / Location	NC

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): 9012 Cyanide	300.0 Fluoride	8082 PCB Aroclors	1668 PCB congeners	8270SIM PAHs	DEAGGT filt CN						Residual Chlorine (Y/N)	923916238
1	ABL-SW013-F005	WT	G	—	—	7/11	1325		11					X			X		x	x	x	x	x	X							001
2	ABL-SW014-F005	WT	G	—	—	7/11	1250		11					X			X		x	x	x	x	x	X							002
3	ABL-SW015-F005	WT	G	—	—	7/11	1220		11					X			X		x	x	x	x	x	X							003
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	ENVIRONTECH	7/11/18	1510	Environeering	7/11/18	1510				
	Amber Paxton	7/11/18	1635	Michael R	7/11/18	1635				
					7/12/18	0800	2.7	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MICHAEL WORDEN

SIGNATURE of SAMPLER: [signature] DATE Signed: 7/11/18

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client - Charlotte
PACE Charlotte
9800 Kincey Ave.
Huntersville NC 28078

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Prepared Date:
July 25, 2018

Report Information:

Pace Project #: 10439456
Sample Receipt Date: 07/13/2018
Client Project #: 92391628 Alcoa-Badin Works
Client Sub PO #: N/A
State Cert #: 27700

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nathan Boberg, your Pace Project Manager.

This report has been reviewed by:

July 26, 2018
Nathan Boberg, Project Manager

(612) 607-6444 (fax)
nathan.boberg@pacelabs.com

Report of Laboratory Analysis

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The results relate only to the samples included in this report.

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
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DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of Pace Analytical - NC. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to 0.25-0.75 parts-per-trillion and were adjusted for the amount of sample extracted.

The dilution level noted on the data tables is being adjusted to allow the correct data flags to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume. The standard reporting limits were not adjusted since the limits remained within the calibration range even after dilutions were applied.

The recoveries of the isotopically-labeled PCB internal standards in the sample extracts ranged from 39-93%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained. Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results table.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the PCB content of the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 81-113%, with relative percent differences of 0.0-14.9%. These values were within method limits. Matrix spikes were not extracted with this sample batch.

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

WO# : 10439456

10439456

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NC

Workorder: 92391628 **Workorder Name:** Eastern Drainage Ditch - SW **Owner Received Date:** 7/12/2018 **Results Requested By:** 7/26/2018

Report To

Nicole Gasiorowski
Pace Analytical Charlotte
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Subcontract To

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	1668 209 PCB Congeners	LAB USE ONLY
1	ABL-SW013-F005	PS	7/11/2018 13:25	92391628001	Water	2	X	001
2	ABL-SW014-F005	PS	7/11/2018 12:50	92391628002	Water	2	X	002
3	ABL-SW015-F005	PS	7/11/2018 12:20	92391628003	Water	2	X	003
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] 7/12/18	[illegible]	[illegible]	7/13/18 [illegible]
2				
3				

Comments

Cooler Temperature on Receipt 3.2 °C **Custody Seal** Y or (N) **Received on Ice** (Y) or N **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Charlotte

Project #:

WO#: 10439456

PM: NB3 Due Date: 07/20/18

CLIENT: PASI-CHRLT

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 4394 2203 4060

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.8 **Cooler Temp Corrected (°C):** 3.8 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** None **Date and Initials of Person Examining Contents:** 7/13/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Nathan Boberg **Date:** 7/16/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
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Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

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Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW013-F005		
Lab Sample ID	92391628001		
Filename	P180721A_11		
Injected By	BAL		
Total Amount Extracted	956 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/11/2018 13:25
ICAL ID	P180721A02	Received	07/13/2018 09:45
CCal Filename(s)	P180721A_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/21/2018 13:50

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.587	2.75	2.0	0.841	42
13C-4-MoCB	3	12.439	3.12	2.0	0.948	47
13C-2,2'-DiCB	4	12.738	1.61	2.0	0.775	39
13C-4,4'-DiCB	15	19.890	1.56	2.0	1.05	52
13C-2,2',6-TrCB	19	16.583	1.10	2.0	0.878	44
13C-3,4,4'-TrCB	37	27.724	1.02	2.0	1.24	62
13C-2,2',6,6'-TeCB	54	20.194	0.81	2.0	0.895	45
13C-3,4,4',5-TeCB	81	34.822	0.80	2.0	1.41	70
13C-3,3',4,4'-TeCB	77	35.426	0.83	2.0	1.40	70
13C-2,2',4,6,6'-PeCB	104	26.315	1.54	2.0	0.918	46
13C-2,3,3',4,4'-PeCB	105	39.020	1.56	2.0	1.35	67
13C-2,3,4,4',5-PeCB	114	38.349	1.48	2.0	1.34	67
13C-2,3',4,4',5-PeCB	118	37.779	1.60	2.0	1.32	66
13C-2,3',4,4',5'-PeCB	123	37.444	1.53	2.0	1.35	68
13C-3,3',4,4',5-PeCB	126	42.206	1.52	2.0	1.40	70
13C-2,2',4,4',6,6'-HxCB	155	32.324	1.26	2.0	0.993	50
13C-HxCB(156/157)	156/157	45.264	1.25	4.0	2.59	65
13C-2,3',4,4',5,5'-HxCB	167	44.039	1.22	2.0	1.26	63
13C-3,3',4,4',5,5'-HxCB	169	48.567	1.28	2.0	1.40	70
13C-2,2',3,4',5,6,6'-HpCB	188	38.266	1.06	2.0	1.19	59
13C-2,3,3',4,4',5,5'-HpCB	189	51.044	1.15	2.0	1.36	68
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.737	0.90	2.0	1.19	59
13C-2,3,3',4,4',5,5',6-OcCB	205	53.113	0.90	2.0	1.31	66
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.536	0.77	2.0	1.28	64
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.527	0.79	2.0	1.16	58
13C--DeCB	209	56.001	0.67	2.0	1.24	62
CleanupStandards						
13C-2,4,4'-TrCB	28	23.297	1.08	2.0	1.58	79
13C-2,3,3',5,5'-PeCB	111	35.393	1.54	2.0	1.43	72
13C-2,2',3,3',5,5',6-HpCB	178	41.385	1.11	2.0	1.43	71
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.292	0.81	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.592	1.57	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.982	1.21	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.725	0.90	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW013-F005
Lab Sample ID 92391628001
Filename P180721A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.261
2		---	---	ND	---	0.261
3		---	---	ND	---	0.261
4		---	---	ND	---	0.261
5		---	---	ND	---	0.261
6		---	---	ND	---	0.261
7		---	---	ND	---	0.261
8		---	---	ND	---	0.261
9		---	---	ND	---	0.261
10		---	---	ND	---	0.261
11		---	---	ND	---	2.56
12	12/13	---	---	ND	---	0.523
13	12/13	---	---	ND	---	0.523
14		---	---	ND	---	0.261
15		---	---	ND	---	0.345
16		---	---	ND	---	0.261
17		---	---	ND	---	0.261
18	18/30	---	---	ND	---	0.523
19		---	---	ND	---	0.261
20	20/28	---	---	ND	---	1.35
21	21/33	---	---	ND	---	1.41
22		---	---	ND	---	0.994
23		---	---	ND	---	0.261
24		---	---	ND	---	0.261
25		---	---	ND	---	0.261
26	26/29	---	---	ND	---	0.523
27		---	---	ND	---	0.261
28	20/28	---	---	ND	---	1.35
29	26/29	---	---	ND	---	0.523
30	18/30	---	---	ND	---	0.523
31		---	---	ND	---	1.36
32		---	---	ND	---	0.261
33	21/33	---	---	ND	---	1.41
34		---	---	ND	---	0.261
35		---	---	ND	---	0.261
36		---	---	ND	---	0.261
37		---	---	ND	---	0.554
38		---	---	ND	---	0.261
39		---	---	ND	---	0.261
40	40/41/71	---	---	ND	---	1.57
41	40/41/71	---	---	ND	---	1.57
42		---	---	ND	---	0.523
43	43/73	---	---	ND	---	0.523
44	44/47/65	---	---	ND	---	1.57
45	45/51	---	---	ND	---	1.05
46		---	---	ND	---	0.523
47	44/47/65	---	---	ND	---	1.57
48		---	---	ND	---	0.523

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
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RT = Retention Time
I = Interference
ng's = Nanograms

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW013-F005
Lab Sample ID 92391628001
Filename P180721A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	25.846	0.79	1.06	---	1.05
50	50/53	---	---	ND	---	1.05
51	45/51	---	---	ND	---	1.05
52		25.309	0.75	1.67	---	1.61
53	50/53	---	---	ND	---	1.05
54		---	---	ND	---	0.523
55		---	---	ND	---	0.523
56		31.519	0.88	0.590	---	0.523
57		---	---	ND	---	0.523
58		---	---	ND	---	0.523
59	59/62/75	---	---	ND	---	1.57
60		---	---	ND	---	0.523
61	61/70/74/76	30.479	0.77	2.25	---	2.09
62	59/62/75	---	---	ND	---	1.57
63		---	---	ND	---	0.523
64		27.774	0.73	0.776	---	0.523
65	44/47/65	---	---	ND	---	1.57
66		30.831	0.74	1.46	---	0.879
67		---	---	ND	---	0.523
68		---	---	ND	---	0.523
69	49/69	25.846	0.79	(1.06)	---	1.05
70	61/70/74/76	30.479	0.77	(2.25)	---	2.09
71	40/41/71	---	---	ND	---	1.57
72		---	---	ND	---	0.523
73	43/73	---	---	ND	---	0.523
74	61/70/74/76	30.479	0.77	(2.25)	---	2.09
75	59/62/75	---	---	ND	---	1.57
76	61/70/74/76	30.479	0.77	(2.25)	---	2.09
77		---	---	ND	---	0.523
78		---	---	ND	---	0.523
79		---	---	ND	---	0.523
80		---	---	ND	---	0.523
81		---	---	ND	---	0.523
82		---	---	ND	---	0.523
83		---	---	ND	---	0.523
84		---	---	ND	---	0.523
85	85/116/117	---	---	ND	---	1.57
86	86/87/97/108/119/125	---	---	ND	---	3.14
87	86/87/97/108/119/125	---	---	ND	---	3.14
88	88/91	---	---	ND	---	1.05
89		---	---	ND	---	0.523
90	90/101/113	---	---	ND	---	1.57
91	88/91	---	---	ND	---	1.05
92		---	---	ND	---	0.523
93	93/98/100/102	---	---	ND	---	2.09
94		---	---	ND	---	0.523
95		---	---	ND	---	0.994
96		---	---	ND	---	0.523

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW013-F005
Lab Sample ID 92391628001
Filename P180721A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.14
98	93/98/100/102	---	---	ND	---	2.09
99		33.213	1.59	0.655	---	0.523
100	93/98/100/102	---	---	ND	---	2.09
101	90/101/113	---	---	ND	---	1.57
102	93/98/100/102	---	---	ND	---	2.09
103		---	---	ND	---	0.523
104		---	---	ND	---	0.523
105		39.037	1.70	0.588	---	0.523
106		---	---	ND	---	0.523
107	107/124	---	---	ND	---	1.05
108	86/87/97/108/119/125	---	---	ND	---	3.14
109		---	---	ND	---	0.523
110	110/115	34.688	1.57	1.40	---	1.05
111		---	---	ND	---	0.523
112		---	---	ND	---	0.523
113	90/101/113	---	---	ND	---	1.57
114		---	---	ND	---	0.523
115	110/115	34.688	1.57	(1.40)	---	1.05
116	85/116/117	---	---	ND	---	1.57
117	85/116/117	---	---	ND	---	1.57
118		37.796	1.52	1.04	---	0.669
119	86/87/97/108/119/125	---	---	ND	---	3.14
120		---	---	ND	---	0.523
121		---	---	ND	---	0.523
122		---	---	ND	---	0.523
123		---	---	ND	---	0.523
124	107/124	---	---	ND	---	1.05
125	86/87/97/108/119/125	---	---	ND	---	3.14
126		---	---	ND	---	0.523
127		---	---	ND	---	0.523
128	128/166	---	---	ND	---	1.05
129	129/138/163	---	---	ND	---	1.57
130		---	---	ND	---	0.523
131		---	---	ND	---	0.523
132		---	---	ND	---	0.523
133		---	---	ND	---	0.523
134	134/143	---	---	ND	---	1.05
135	135/151	---	---	ND	---	1.05
136		---	---	ND	---	0.523
137		---	---	ND	---	0.523
138	129/138/163	---	---	ND	---	1.57
139	139/140	---	---	ND	---	1.05
140	139/140	---	---	ND	---	1.05
141		---	---	ND	---	0.523
142		---	---	ND	---	0.523
143	134/143	---	---	ND	---	1.05
144		---	---	ND	---	0.523

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
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I = Interference
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW013-F005
Lab Sample ID 92391628001
Filename P180721A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.523
146		---	---	ND	---	0.523
147	147/149	---	---	ND	---	1.05
148		---	---	ND	---	0.523
149	147/149	---	---	ND	---	1.05
150		---	---	ND	---	0.523
151	135/151	---	---	ND	---	1.05
152		---	---	ND	---	0.523
153	153/168	39.691	1.23	1.31	---	1.05
154		---	---	ND	---	0.523
155		---	---	ND	---	0.523
156	156/157	---	---	ND	---	1.05
157	156/157	---	---	ND	---	1.05
158		---	---	ND	---	0.523
159		---	---	ND	---	0.523
160		---	---	ND	---	0.523
161		---	---	ND	---	0.523
162		---	---	ND	---	0.523
163	129/138/163	---	---	ND	---	1.57
164		---	---	ND	---	0.523
165		---	---	ND	---	0.523
166	128/166	---	---	ND	---	1.05
167		---	---	ND	---	0.523
168	153/168	39.691	1.23	(1.31)	---	1.05
169		---	---	ND	---	0.523
170		---	---	ND	---	0.523
171	171/173	---	---	ND	---	1.05
172		---	---	ND	---	0.523
173	171/173	---	---	ND	---	1.05
174		43.235	1.07	0.569	---	0.523
175		---	---	ND	---	0.523
176		---	---	ND	---	0.523
177		---	---	ND	---	0.523
178		---	---	ND	---	0.523
179		---	---	ND	---	0.523
180	180/193	46.639	1.08	1.17	---	1.05
181		---	---	ND	---	0.523
182		---	---	ND	---	0.523
183	183/185	---	---	ND	---	1.05
184		---	---	ND	---	0.523
185	183/185	---	---	ND	---	1.05
186		---	---	ND	---	0.523
187		42.357	1.04	0.694	---	0.523
188		---	---	ND	---	0.523
189		---	---	ND	---	0.523
190		---	---	ND	---	0.523
191		---	---	ND	---	0.523
192		---	---	ND	---	0.523

Conc = Concentration
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R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW013-F005
Lab Sample ID 92391628001
Filename P180721A_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	46.639	1.08	(1.17)	---	1.05
194		---	---	ND	---	0.784
195		---	---	ND	---	0.784
196		---	---	ND	---	0.784
197	197/200	---	---	ND	---	1.57
198	198/199	---	---	ND	---	1.57
199	198/199	---	---	ND	---	1.57
200	197/200	---	---	ND	---	1.57
201		---	---	ND	---	0.784
202		---	---	ND	---	0.784
203		---	---	ND	---	0.784
204		---	---	ND	---	0.784
205		---	---	ND	---	0.784
206		---	---	ND	---	0.784
207		---	---	ND	---	0.784
208		---	---	ND	---	0.784
209		---	---	ND	---	0.784

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW013-F005
Lab Sample ID	92391628001
Filename	P180721A_11

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	7.80
Total Pentachloro Biphenyls	3.69
Total Hexachloro Biphenyls	1.31
Total Heptachloro Biphenyls	2.43
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	15.2

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW014-F005		
Lab Sample ID	92391628002		
Filename	P180721A_12		
Injected By	BAL		
Total Amount Extracted	935 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/11/2018 12:50
ICAL ID	P180721A02	Received	07/13/2018 09:45
CCal Filename(s)	P180721A_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/21/2018 14:50

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.611	2.96	2.0	0.946	47
13C-4-MoCB	3	12.451	3.21	2.0	1.14	57
13C-2,2'-DiCB	4	12.751	1.43	2.0	0.961	48
13C-4,4'-DiCB	15	19.902	1.62	2.0	1.29	64
13C-2,2',6-TrCB	19	16.583	1.08	2.0	1.15	57
13C-3,4,4'-TrCB	37	27.723	1.04	2.0	1.49	74
13C-2,2',6,6'-TeCB	54	20.228	0.79	2.0	1.08	54
13C-3,4,4',5-TeCB	81	34.839	0.79	2.0	1.64	82
13C-3,3',4,4'-TeCB	77	35.442	0.83	2.0	1.66	83
13C-2,2',4,6,6'-PeCB	104	26.315	1.56	2.0	1.13	57
13C-2,3,3',4,4'-PeCB	105	39.036	1.52	2.0	1.68	84
13C-2,3,4,4',5-PeCB	114	38.348	1.66	2.0	1.63	81
13C-2,3',4,4',5-PeCB	118	37.795	1.56	2.0	1.65	82
13C-2,3',4,4',5'-PeCB	123	37.460	1.63	2.0	1.64	82
13C-3,3',4,4',5-PeCB	126	42.205	1.53	2.0	1.76	88
13C-2,2',4,4',6,6'-HxCB	155	32.340	1.33	2.0	1.26	63
13C-HxCB(156/157)	156/157	45.263	1.22	4.0	3.14	79
13C-2,3',4,4',5,5'-HxCB	167	44.072	1.29	2.0	1.53	77
13C-3,3',4,4',5,5'-HxCB	169	48.549	1.26	2.0	1.75	88
13C-2,2',3,4',5,6,6'-HpCB	188	38.264	1.04	2.0	1.45	72
13C-2,3,3',4,4',5,5'-HpCB	189	51.065	1.01	2.0	1.67	84
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.753	0.91	2.0	1.47	73
13C-2,3,3',4,4',5,5',6-OcCB	205	53.112	0.85	2.0	1.60	80
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.556	0.78	2.0	1.51	76
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.526	0.81	2.0	1.43	72
13C--DeCB	209	56.022	0.72	2.0	1.48	74
CleanupStandards						
13C-2,4,4'-TrCB	28	23.297	1.10	2.0	1.83	92
13C-2,3,3',5,5'-PeCB	111	35.392	1.54	2.0	1.66	83
13C-2,2',3,3',5,5',6-HpCB	178	41.400	1.09	2.0	1.64	82
Recovery Standards						
13C-2,5-DiCB	9	15.205	1.53	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.292	0.82	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.608	1.61	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.981	1.30	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.746	0.89	2.0	NA	NA

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW014-F005
Lab Sample ID	92391628002
Filename	P180721A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.267
2		---	---	ND	---	0.267
3		---	---	ND	---	0.267
4		---	---	ND	---	0.267
5		---	---	ND	---	0.267
6		---	---	ND	---	0.267
7		---	---	ND	---	0.267
8		---	---	ND	---	0.267
9		---	---	ND	---	0.267
10		---	---	ND	---	0.267
11		---	---	ND	---	2.62
12	12/13	---	---	ND	---	0.535
13	12/13	---	---	ND	---	0.535
14		---	---	ND	---	0.267
15		---	---	ND	---	0.353
16		---	---	ND	---	0.267
17		---	---	ND	---	0.267
18	18/30	---	---	ND	---	0.535
19		---	---	ND	---	0.267
20	20/28	---	---	ND	---	1.38
21	21/33	---	---	ND	---	1.44
22		---	---	ND	---	1.02
23		---	---	ND	---	0.267
24		---	---	ND	---	0.267
25		---	---	ND	---	0.267
26	26/29	---	---	ND	---	0.535
27		---	---	ND	---	0.267
28	20/28	---	---	ND	---	1.38
29	26/29	---	---	ND	---	0.535
30	18/30	---	---	ND	---	0.535
31		---	---	ND	---	1.39
32		---	---	ND	---	0.267
33	21/33	---	---	ND	---	1.44
34		---	---	ND	---	0.267
35		---	---	ND	---	0.267
36		---	---	ND	---	0.267
37		---	---	ND	---	0.567
38		---	---	ND	---	0.267
39		---	---	ND	---	0.267
40	40/41/71	---	---	ND	---	1.60
41	40/41/71	---	---	ND	---	1.60
42		---	---	ND	---	0.535
43	43/73	---	---	ND	---	0.535
44	44/47/65	---	---	ND	---	1.60
45	45/51	---	---	ND	---	1.07
46		---	---	ND	---	0.535
47	44/47/65	---	---	ND	---	1.60
48		---	---	ND	---	0.535

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW014-F005
Lab Sample ID 92391628002
Filename P180721A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.07
50	50/53	---	---	ND	---	1.07
51	45/51	---	---	ND	---	1.07
52		---	---	ND	---	1.65
53	50/53	---	---	ND	---	1.07
54		---	---	ND	---	0.535
55		---	---	ND	---	0.535
56		---	---	ND	---	0.535
57		---	---	ND	---	0.535
58		---	---	ND	---	0.535
59	59/62/75	---	---	ND	---	1.60
60		---	---	ND	---	0.535
61	61/70/74/76	---	---	ND	---	2.14
62	59/62/75	---	---	ND	---	1.60
63		---	---	ND	---	0.535
64		27.757	0.67	0.761	---	0.535
65	44/47/65	---	---	ND	---	1.60
66		30.831	0.80	1.39	---	0.898
67		---	---	ND	---	0.535
68		---	---	ND	---	0.535
69	49/69	---	---	ND	---	1.07
70	61/70/74/76	---	---	ND	---	2.14
71	40/41/71	---	---	ND	---	1.60
72		---	---	ND	---	0.535
73	43/73	---	---	ND	---	0.535
74	61/70/74/76	---	---	ND	---	2.14
75	59/62/75	---	---	ND	---	1.60
76	61/70/74/76	---	---	ND	---	2.14
77		---	---	ND	---	0.535
78		---	---	ND	---	0.535
79		---	---	ND	---	0.535
80		---	---	ND	---	0.535
81		---	---	ND	---	0.535
82		---	---	ND	---	0.535
83		---	---	ND	---	0.535
84		---	---	ND	---	0.535
85	85/116/117	---	---	ND	---	1.60
86	86/87/97/108/119/125	---	---	ND	---	3.21
87	86/87/97/108/119/125	---	---	ND	---	3.21
88	88/91	---	---	ND	---	1.07
89		---	---	ND	---	0.535
90	90/101/113	---	---	ND	---	1.60
91	88/91	---	---	ND	---	1.07
92		---	---	ND	---	0.535
93	93/98/100/102	---	---	ND	---	2.14
94		---	---	ND	---	0.535
95		---	---	ND	---	1.02
96		---	---	ND	---	0.535

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IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.21
98	93/98/100/102	---	---	ND	---	2.14
99		33.229	1.60	0.639	---	0.535
100	93/98/100/102	---	---	ND	---	2.14
101	90/101/113	---	---	ND	---	1.60
102	93/98/100/102	---	---	ND	---	2.14
103		---	---	ND	---	0.535
104		---	---	ND	---	0.535
105		---	---	ND	---	0.535
106		---	---	ND	---	0.535
107	107/124	---	---	ND	---	1.07
108	86/87/97/108/119/125	---	---	ND	---	3.21
109		---	---	ND	---	0.535
110	110/115	34.721	1.65	1.19	---	1.07
111		---	---	ND	---	0.535
112		---	---	ND	---	0.535
113	90/101/113	---	---	ND	---	1.60
114		---	---	ND	---	0.535
115	110/115	34.721	1.65	(1.19)	---	1.07
116	85/116/117	---	---	ND	---	1.60
117	85/116/117	---	---	ND	---	1.60
118		37.812	1.47	0.864	---	0.685
119	86/87/97/108/119/125	---	---	ND	---	3.21
120		---	---	ND	---	0.535
121		---	---	ND	---	0.535
122		---	---	ND	---	0.535
123		---	---	ND	---	0.535
124	107/124	---	---	ND	---	1.07
125	86/87/97/108/119/125	---	---	ND	---	3.21
126		---	---	ND	---	0.535
127		---	---	ND	---	0.535
128	128/166	---	---	ND	---	1.07
129	129/138/163	---	---	ND	---	1.60
130		---	---	ND	---	0.535
131		---	---	ND	---	0.535
132		---	---	ND	---	0.535
133		---	---	ND	---	0.535
134	134/143	---	---	ND	---	1.07
135	135/151	---	---	ND	---	1.07
136		---	---	ND	---	0.535
137		---	---	ND	---	0.535
138	129/138/163	---	---	ND	---	1.60
139	139/140	---	---	ND	---	1.07
140	139/140	---	---	ND	---	1.07
141		---	---	ND	---	0.535
142		---	---	ND	---	0.535
143	134/143	---	---	ND	---	1.07
144		---	---	ND	---	0.535

Conc = Concentration
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW014-F005
Lab Sample ID 92391628002
Filename P180721A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.535
146		---	---	ND	---	0.535
147	147/149	36.604	1.17	1.17	---	1.07
148		---	---	ND	---	0.535
149	147/149	36.604	1.17	(1.17)	---	1.07
150		---	---	ND	---	0.535
151	135/151	---	---	ND	---	1.07
152		---	---	ND	---	0.535
153	153/168	39.707	1.24	1.40	---	1.07
154		---	---	ND	---	0.535
155		---	---	ND	---	0.535
156	156/157	---	---	ND	---	1.07
157	156/157	---	---	ND	---	1.07
158		---	---	ND	---	0.535
159		---	---	ND	---	0.535
160		---	---	ND	---	0.535
161		---	---	ND	---	0.535
162		---	---	ND	---	0.535
163	129/138/163	---	---	ND	---	1.60
164		---	---	ND	---	0.535
165		---	---	ND	---	0.535
166	128/166	---	---	ND	---	1.07
167		---	---	ND	---	0.535
168	153/168	39.707	1.24	(1.40)	---	1.07
169		---	---	ND	---	0.535
170		---	---	ND	---	0.535
171	171/173	---	---	ND	---	1.07
172		---	---	ND	---	0.535
173	171/173	---	---	ND	---	1.07
174		43.233	1.09	0.648	---	0.535
175		---	---	ND	---	0.535
176		---	---	ND	---	0.535
177		---	---	ND	---	0.535
178		---	---	ND	---	0.535
179		---	---	ND	---	0.535
180	180/193	46.638	1.07	1.33	---	1.07
181		---	---	ND	---	0.535
182		---	---	ND	---	0.535
183	183/185	---	---	ND	---	1.07
184		---	---	ND	---	0.535
185	183/185	---	---	ND	---	1.07
186		---	---	ND	---	0.535
187		42.339	1.04	0.806	---	0.535
188		---	---	ND	---	0.535
189		---	---	ND	---	0.535
190		---	---	ND	---	0.535
191		---	---	ND	---	0.535
192		---	---	ND	---	0.535

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW014-F005
Lab Sample ID 92391628002
Filename P180721A_12

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	46.638	1.07	(1.33)	---	1.07
194		---	---	ND	---	0.802
195		---	---	ND	---	0.802
196		---	---	ND	---	0.802
197	197/200	---	---	ND	---	1.60
198	198/199	---	---	ND	---	1.60
199	198/199	---	---	ND	---	1.60
200	197/200	---	---	ND	---	1.60
201		---	---	ND	---	0.802
202		---	---	ND	---	0.802
203		---	---	ND	---	0.802
204		---	---	ND	---	0.802
205		---	---	ND	---	0.802
206		---	---	ND	---	0.802
207		---	---	ND	---	0.802
208		---	---	ND	---	0.802
209		---	---	ND	---	0.802

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW014-F005
Lab Sample ID	92391628002
Filename	P180721A_12

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	2.15
Total Pentachloro Biphenyls	2.70
Total Hexachloro Biphenyls	2.57
Total Heptachloro Biphenyls	2.79
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	10.2

ND = Not Detected

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - PACE Charlotte

Client's Sample ID	ABL-SW015-F005		
Lab Sample ID	92391628003		
Filename	P180721A_13		
Injected By	BAL		
Total Amount Extracted	965 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	07/11/2018 12:20
ICAL ID	P180721A02	Received	07/13/2018 09:45
CCal Filename(s)	P180721A_01	Extracted	07/17/2018 13:15
Method Blank ID	BLANK-63512	Analyzed	07/21/2018 15:49

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.99	2.0	0.892	45
13C-4-MoCB	3	12.427	2.95	2.0	1.04	52
13C-2,2'-DiCB	4	12.739	1.66	2.0	0.910	45
13C-4,4'-DiCB	15	19.890	1.51	2.0	1.31	65
13C-2,2',6-TrCB	19	16.571	1.04	2.0	1.08	54
13C-3,4,4'-TrCB	37	27.708	1.10	2.0	1.64	82
13C-2,2',6,6'-TeCB	54	20.195	0.75	2.0	1.12	56
13C-3,4,4',5-TeCB	81	34.824	0.81	2.0	1.62	81
13C-3,3',4,4'-TeCB	77	35.428	0.80	2.0	1.62	81
13C-2,2',4,6,6'-PeCB	104	26.316	1.52	2.0	1.34	67
13C-2,3,3',4,4'-PeCB	105	39.022	1.57	2.0	1.75	88
13C-2,3,4,4',5-PeCB	114	38.335	1.58	2.0	1.69	85
13C-2,3',4,4',5-PeCB	118	37.781	1.67	2.0	1.75	87
13C-2,3',4,4',5'-PeCB	123	37.446	1.60	2.0	1.68	84
13C-3,3',4,4',5-PeCB	126	42.192	1.55	2.0	1.86	93
13C-2,2',4,4',6,6'-HxCB	155	32.326	1.27	2.0	1.38	69
13C-HxCB(156/157)	156/157	45.233	1.22	4.0	3.13	78
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.31	2.0	1.63	82
13C-3,3',4,4',5,5'-HxCB	169	48.537	1.25	2.0	1.85	93
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	1.07	2.0	1.48	74
13C-2,3,3',4,4',5,5'-HpCB	189	51.048	1.03	2.0	1.74	87
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.93	2.0	1.47	74
13C-2,3,3',4,4',5,5',6-OcCB	205	53.117	0.96	2.0	1.67	84
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.540	0.79	2.0	1.64	82
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.509	0.82	2.0	1.48	74
13C--DeCB	209	56.006	0.71	2.0	1.63	81
CleanupStandards						
13C-2,4,4'-TrCB	28	23.298	0.99	2.0	1.77	88
13C-2,3,3',5,5'-PeCB	111	35.378	1.58	2.0	1.64	82
13C-2,2',3,3',5,5',6-HpCB	178	41.404	1.10	2.0	1.57	78
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.56	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.294	0.79	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.594	1.55	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.24	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.729	0.92	2.0	NA	NA

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW015-F005
Lab Sample ID 92391628003
Filename P180721A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.259
2		---	---	ND	---	0.259
3		---	---	ND	---	0.259
4		---	---	ND	---	0.259
5		---	---	ND	---	0.259
6		---	---	ND	---	0.259
7		---	---	ND	---	0.259
8		---	---	ND	---	0.259
9		---	---	ND	---	0.259
10		---	---	ND	---	0.259
11		---	---	ND	---	2.54
12	12/13	---	---	ND	---	0.518
13	12/13	---	---	ND	---	0.518
14		---	---	ND	---	0.259
15		---	---	ND	---	0.342
16		---	---	ND	---	0.259
17		---	---	ND	---	0.259
18	18/30	---	---	ND	---	0.518
19		---	---	ND	---	0.259
20	20/28	---	---	ND	---	1.34
21	21/33	---	---	ND	---	1.40
22		---	---	ND	---	0.985
23		---	---	ND	---	0.259
24		---	---	ND	---	0.259
25		---	---	ND	---	0.259
26	26/29	---	---	ND	---	0.518
27		---	---	ND	---	0.259
28	20/28	---	---	ND	---	1.34
29	26/29	---	---	ND	---	0.518
30	18/30	---	---	ND	---	0.518
31		---	---	ND	---	1.35
32		---	---	ND	---	0.259
33	21/33	---	---	ND	---	1.40
34		---	---	ND	---	0.259
35		---	---	ND	---	0.259
36		---	---	ND	---	0.259
37		---	---	ND	---	0.549
38		---	---	ND	---	0.259
39		---	---	ND	---	0.259
40	40/41/71	---	---	ND	---	1.55
41	40/41/71	---	---	ND	---	1.55
42		---	---	ND	---	0.518
43	43/73	---	---	ND	---	0.518
44	44/47/65	---	---	ND	---	1.55
45	45/51	---	---	ND	---	1.04
46		---	---	ND	---	0.518
47	44/47/65	---	---	ND	---	1.55
48		---	---	ND	---	0.518

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW015-F005
Lab Sample ID 92391628003
Filename P180721A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.04
50	50/53	---	---	ND	---	1.04
51	45/51	---	---	ND	---	1.04
52		---	---	ND	---	1.60
53	50/53	---	---	ND	---	1.04
54		---	---	ND	---	0.518
55		---	---	ND	---	0.518
56		---	---	ND	---	0.518
57		---	---	ND	---	0.518
58		---	---	ND	---	0.518
59	59/62/75	---	---	ND	---	1.55
60		---	---	ND	---	0.518
61	61/70/74/76	---	---	ND	---	2.07
62	59/62/75	---	---	ND	---	1.55
63		---	---	ND	---	0.518
64		27.742	0.79	0.603	---	0.518
65	44/47/65	---	---	ND	---	1.55
66		30.833	0.79	1.08	---	0.871
67		---	---	ND	---	0.518
68		---	---	ND	---	0.518
69	49/69	---	---	ND	---	1.04
70	61/70/74/76	---	---	ND	---	2.07
71	40/41/71	---	---	ND	---	1.55
72		---	---	ND	---	0.518
73	43/73	---	---	ND	---	0.518
74	61/70/74/76	---	---	ND	---	2.07
75	59/62/75	---	---	ND	---	1.55
76	61/70/74/76	---	---	ND	---	2.07
77		---	---	ND	---	0.518
78		---	---	ND	---	0.518
79		---	---	ND	---	0.518
80		---	---	ND	---	0.518
81		---	---	ND	---	0.518
82		---	---	ND	---	0.518
83		---	---	ND	---	0.518
84		---	---	ND	---	0.518
85	85/116/117	---	---	ND	---	1.55
86	86/87/97/108/119/125	---	---	ND	---	3.11
87	86/87/97/108/119/125	---	---	ND	---	3.11
88	88/91	---	---	ND	---	1.04
89		---	---	ND	---	0.518
90	90/101/113	---	---	ND	---	1.55
91	88/91	---	---	ND	---	1.04
92		---	---	ND	---	0.518
93	93/98/100/102	---	---	ND	---	2.07
94		---	---	ND	---	0.518
95		---	---	ND	---	0.985
96		---	---	ND	---	0.518

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW015-F005
Lab Sample ID 92391628003
Filename P180721A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
97	86/87/97/108/119/125	---	---	ND	---	3.11
98	93/98/100/102	---	---	ND	---	2.07
99		---	---	ND	---	0.518
100	93/98/100/102	---	---	ND	---	2.07
101	90/101/113	---	---	ND	---	1.55
102	93/98/100/102	---	---	ND	---	2.07
103		---	---	ND	---	0.518
104		---	---	ND	---	0.518
105		---	---	ND	---	0.518
106		---	---	ND	---	0.518
107	107/124	---	---	ND	---	1.04
108	86/87/97/108/119/125	---	---	ND	---	3.11
109		---	---	ND	---	0.518
110	110/115	---	---	ND	---	1.04
111		---	---	ND	---	0.518
112		---	---	ND	---	0.518
113	90/101/113	---	---	ND	---	1.55
114		---	---	ND	---	0.518
115	110/115	---	---	ND	---	1.04
116	85/116/117	---	---	ND	---	1.55
117	85/116/117	---	---	ND	---	1.55
118		---	---	ND	---	0.663
119	86/87/97/108/119/125	---	---	ND	---	3.11
120		---	---	ND	---	0.518
121		---	---	ND	---	0.518
122		---	---	ND	---	0.518
123		---	---	ND	---	0.518
124	107/124	---	---	ND	---	1.04
125	86/87/97/108/119/125	---	---	ND	---	3.11
126		---	---	ND	---	0.518
127		---	---	ND	---	0.518
128	128/166	---	---	ND	---	1.04
129	129/138/163	---	---	ND	---	1.55
130		---	---	ND	---	0.518
131		---	---	ND	---	0.518
132		---	---	ND	---	0.518
133		---	---	ND	---	0.518
134	134/143	---	---	ND	---	1.04
135	135/151	---	---	ND	---	1.04
136		---	---	ND	---	0.518
137		---	---	ND	---	0.518
138	129/138/163	---	---	ND	---	1.55
139	139/140	---	---	ND	---	1.04
140	139/140	---	---	ND	---	1.04
141		---	---	ND	---	0.518
142		---	---	ND	---	0.518
143	134/143	---	---	ND	---	1.04
144		---	---	ND	---	0.518

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Sample Analysis Results

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Lab Sample ID 92391628003
Filename P180721A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.518
146		---	---	ND	---	0.518
147	147/149	---	---	ND	---	1.04
148		---	---	ND	---	0.518
149	147/149	---	---	ND	---	1.04
150		---	---	ND	---	0.518
151	135/151	---	---	ND	---	1.04
152		---	---	ND	---	0.518
153	153/168	---	---	ND	---	1.04
154		---	---	ND	---	0.518
155		---	---	ND	---	0.518
156	156/157	---	---	ND	---	1.04
157	156/157	---	---	ND	---	1.04
158		---	---	ND	---	0.518
159		---	---	ND	---	0.518
160		---	---	ND	---	0.518
161		---	---	ND	---	0.518
162		---	---	ND	---	0.518
163	129/138/163	---	---	ND	---	1.55
164		---	---	ND	---	0.518
165		---	---	ND	---	0.518
166	128/166	---	---	ND	---	1.04
167		---	---	ND	---	0.518
168	153/168	---	---	ND	---	1.04
169		---	---	ND	---	0.518
170		---	---	ND	---	0.518
171	171/173	---	---	ND	---	1.04
172		---	---	ND	---	0.518
173	171/173	---	---	ND	---	1.04
174		---	---	ND	---	0.518
175		---	---	ND	---	0.518
176		---	---	ND	---	0.518
177		---	---	ND	---	0.518
178		---	---	ND	---	0.518
179		---	---	ND	---	0.518
180	180/193	---	---	ND	---	1.04
181		---	---	ND	---	0.518
182		---	---	ND	---	0.518
183	183/185	---	---	ND	---	1.04
184		---	---	ND	---	0.518
185	183/185	---	---	ND	---	1.04
186		---	---	ND	---	0.518
187		42.343	1.09	0.526	---	0.518
188		---	---	ND	---	0.518
189		---	---	ND	---	0.518
190		---	---	ND	---	0.518
191		---	---	ND	---	0.518
192		---	---	ND	---	0.518

Conc = Concentration
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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID ABL-SW015-F005
Lab Sample ID 92391628003
Filename P180721A_13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.04
194		---	---	ND	---	0.777
195		---	---	ND	---	0.777
196		---	---	ND	---	0.777
197	197/200	---	---	ND	---	1.55
198	198/199	---	---	ND	---	1.55
199	198/199	---	---	ND	---	1.55
200	197/200	---	---	ND	---	1.55
201		---	---	ND	---	0.777
202		---	---	ND	---	0.777
203		---	---	ND	---	0.777
204		---	---	ND	---	0.777
205		---	---	ND	---	0.777
206		---	---	ND	---	0.777
207		---	---	ND	---	0.777
208		---	---	ND	---	0.777
209		---	---	ND	---	0.777

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	ABL-SW015-F005
Lab Sample ID	92391628003
Filename	P180721A_13

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	1.68
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	0.526
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	2.20

ND = Not Detected

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID	BLANK-63512		
Filename	P180721B_06		
Injected By	BAL	Matrix	Water (QC Matrix)
Total Amount Extracted	1040 mL	Extracted	07/17/2018 13:15
ICAL ID	P180721B02	Analyzed	07/21/2018 22:54
CCal Filename(s)	P180721B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.599	2.94	2.0	1.30	65
13C-4-MoCB	3	12.439	2.84	2.0	1.42	71
13C-2,2'-DiCB	4	12.738	1.54	2.0	1.28	64
13C-4,4'-DiCB	15	19.890	1.52	2.0	1.48	74
13C-2,2',6-TrCB	19	16.559	0.96	2.0	1.91	96
13C-3,4,4'-TrCB	37	27.710	1.17	2.0	1.92	96
13C-2,2',6,6'-TeCB	54	20.197	0.89	2.0	1.45	73
13C-3,4,4',5-TeCB	81	34.825	0.84	2.0	1.81	90
13C-3,3',4,4'-TeCB	77	35.429	0.85	2.0	1.79	90
13C-2,2',4,6,6'-PeCB	104	26.318	1.52	2.0	1.28	64
13C-2,3,3',4,4'-PeCB	105	39.006	1.60	2.0	1.88	94
13C-2,3,4,4',5-PeCB	114	38.335	1.64	2.0	1.78	89
13C-2,3',4,4',5-PeCB	118	37.782	1.51	2.0	1.85	92
13C-2,3',4,4',5'-PeCB	123	37.446	1.49	2.0	1.85	93
13C-3,3',4,4',5-PeCB	126	42.192	1.59	2.0	1.97	99
13C-2,2',4,4',6,6'-HxCB	155	32.327	1.27	2.0	1.27	64
13C-HxCB (156/157)	156/157	45.250	1.31	4.0	3.34	84
13C-2,3',4,4',5,5'-HxCB	167	44.042	1.28	2.0	1.68	84
13C-3,3',4,4',5,5'-HxCB	169	48.536	1.29	2.0	1.86	93
13C-2,2',3,4',5,6,6'-HpCB	188	38.251	1.02	2.0	1.47	74
13C-2,3,3',4,4',5,5'-HpCB	189	51.047	1.07	2.0	1.80	90
13C-2,2',3,3',5,5',6,6'-OcCB	202	43.740	0.95	2.0	1.55	77
13C-2,3,3',4,4',5,5',6-OcCB	205	53.116	0.89	2.0	1.74	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.539	0.76	2.0	1.60	80
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.508	0.84	2.0	1.56	78
13C--DeCB	209	55.983	0.63	2.0	1.62	81
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.283	1.15	2.0	2.23	111
13C-2,3,3',5,5'-PeCB	111	35.396	1.61	2.0	1.82	91
13C-2,2',3,3',5,5',6-HpCB	178	41.387	1.05	2.0	1.75	87
Recovery Standards						
13C-2,5-DiCB	9	15.193	1.60	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.295	0.75	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.595	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	40.968	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.728	0.94	2.0	NA	NA

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R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

ND = Not Detected
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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.241
2		---	---	ND	---	0.241
3		---	---	ND	---	0.241
4		---	---	ND	---	0.241
5		---	---	ND	---	0.241
6		---	---	ND	---	0.241
7		---	---	ND	---	0.241
8		---	---	ND	---	0.241
9		---	---	ND	---	0.241
10		---	---	ND	---	0.241
11		---	---	ND	---	2.37
12	12/13	---	---	ND	---	0.483
13	12/13	---	---	ND	---	0.483
14		---	---	ND	---	0.241
15		---	---	ND	---	0.241
16		---	---	ND	---	0.241
17		---	---	ND	---	0.241
18	18/30	---	---	ND	---	0.483
19		---	---	ND	---	0.241
20	20/28	---	---	ND	---	1.25
21	21/33	---	---	ND	---	1.30
22		---	---	ND	---	0.918
23		---	---	ND	---	0.241
24		---	---	ND	---	0.241
25		---	---	ND	---	0.241
26	26/29	---	---	ND	---	0.483
27		---	---	ND	---	0.241
28	20/28	---	---	ND	---	1.25
29	26/29	---	---	ND	---	0.483
30	18/30	---	---	ND	---	0.483
31		---	---	ND	---	1.26
32		---	---	ND	---	0.241
33	21/33	---	---	ND	---	1.30
34		---	---	ND	---	0.241
35		---	---	ND	---	0.241
36		---	---	ND	---	0.241
37		---	---	ND	---	0.512
38		---	---	ND	---	0.241
39		---	---	ND	---	0.241
40	40/41/71	---	---	ND	---	1.45
41	40/41/71	---	---	ND	---	1.45
42		---	---	ND	---	0.483
43	43/73	---	---	ND	---	0.483
44	44/47/65	---	---	ND	---	1.45
45	45/51	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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NA = Not Applicable
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* = See Discussion
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RT = Retention Time
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
46		---	---	ND	---	0.483
47	44/47/65	---	---	ND	---	1.45
48		---	---	ND	---	0.483
49	49/69	---	---	ND	---	0.966
50	50/53	---	---	ND	---	0.966
51	45/51	---	---	ND	---	0.966
52		---	---	ND	---	1.49
53	50/53	---	---	ND	---	0.966
54		---	---	ND	---	0.483
55		---	---	ND	---	0.483
56		---	---	ND	---	0.483
57		---	---	ND	---	0.483
58		---	---	ND	---	0.483
59	59/62/75	---	---	ND	---	1.45
60		---	---	ND	---	0.483
61	61/70/74/76	---	---	ND	---	1.93
62	59/62/75	---	---	ND	---	1.45
63		---	---	ND	---	0.483
64		---	---	ND	---	0.483
65	44/47/65	---	---	ND	---	1.45
66		---	---	ND	---	0.811
67		---	---	ND	---	0.483
68		---	---	ND	---	0.483
69	49/69	---	---	ND	---	0.966
70	61/70/74/76	---	---	ND	---	1.93
71	40/41/71	---	---	ND	---	1.45
72		---	---	ND	---	0.483
73	43/73	---	---	ND	---	0.483
74	61/70/74/76	---	---	ND	---	1.93
75	59/62/75	---	---	ND	---	1.45
76	61/70/74/76	---	---	ND	---	1.93
77		---	---	ND	---	0.483
78		---	---	ND	---	0.483
79		---	---	ND	---	0.483
80		---	---	ND	---	0.483
81		---	---	ND	---	0.483
82		---	---	ND	---	0.483
83		---	---	ND	---	0.483
84		---	---	ND	---	0.483
85	85/116/117	---	---	ND	---	1.45
86	86/87/97/108/119/125	---	---	ND	---	2.90
87	86/87/97/108/119/125	---	---	ND	---	2.90
88	88/91	---	---	ND	---	0.966
89		---	---	ND	---	0.483
90	90/101/113	---	---	ND	---	1.45

Conc = Concentration
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
91	88/91	---	---	ND	---	0.966
92		---	---	ND	---	0.483
93	93/98/100/102	---	---	ND	---	1.93
94		---	---	ND	---	0.483
95		---	---	ND	---	0.918
96		---	---	ND	---	0.483
97	86/87/97/108/119/125	---	---	ND	---	2.90
98	93/98/100/102	---	---	ND	---	1.93
99		---	---	ND	---	0.483
100	93/98/100/102	---	---	ND	---	1.93
101	90/101/113	---	---	ND	---	1.45
102	93/98/100/102	---	---	ND	---	1.93
103		---	---	ND	---	0.483
104		---	---	ND	---	0.483
105		---	---	ND	---	0.483
106		---	---	ND	---	0.483
107	107/124	---	---	ND	---	0.966
108	86/87/97/108/119/125	---	---	ND	---	2.90
109		---	---	ND	---	0.483
110	110/115	---	---	ND	---	0.966
111		---	---	ND	---	0.483
112		---	---	ND	---	0.483
113	90/101/113	---	---	ND	---	1.45
114		---	---	ND	---	0.483
115	110/115	---	---	ND	---	0.966
116	85/116/117	---	---	ND	---	1.45
117	85/116/117	---	---	ND	---	1.45
118		---	---	ND	---	0.618
119	86/87/97/108/119/125	---	---	ND	---	2.90
120		---	---	ND	---	0.483
121		---	---	ND	---	0.483
122		---	---	ND	---	0.483
123		---	---	ND	---	0.483
124	107/124	---	---	ND	---	0.966
125	86/87/97/108/119/125	---	---	ND	---	2.90
126		---	---	ND	---	0.483
127		---	---	ND	---	0.483
128	128/166	---	---	ND	---	0.966
129	129/138/163	---	---	ND	---	1.45
130		---	---	ND	---	0.483
131		---	---	ND	---	0.483
132		---	---	ND	---	0.483
133		---	---	ND	---	0.483
134	134/143	---	---	ND	---	0.966
135	135/151	---	---	ND	---	0.966

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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
136		---	---	ND	---	0.483
137		---	---	ND	---	0.483
138	129/138/163	---	---	ND	---	1.45
139	139/140	---	---	ND	---	0.966
140	139/140	---	---	ND	---	0.966
141		---	---	ND	---	0.483
142		---	---	ND	---	0.483
143	134/143	---	---	ND	---	0.966
144		---	---	ND	---	0.483
145		---	---	ND	---	0.483
146		---	---	ND	---	0.483
147	147/149	---	---	ND	---	0.966
148		---	---	ND	---	0.483
149	147/149	---	---	ND	---	0.966
150		---	---	ND	---	0.483
151	135/151	---	---	ND	---	0.966
152		---	---	ND	---	0.483
153	153/168	---	---	ND	---	0.966
154		---	---	ND	---	0.483
155		---	---	ND	---	0.483
156	156/157	---	---	ND	---	0.966
157	156/157	---	---	ND	---	0.966
158		---	---	ND	---	0.483
159		---	---	ND	---	0.483
160		---	---	ND	---	0.483
161		---	---	ND	---	0.483
162		---	---	ND	---	0.483
163	129/138/163	---	---	ND	---	1.45
164		---	---	ND	---	0.483
165		---	---	ND	---	0.483
166	128/166	---	---	ND	---	0.966
167		---	---	ND	---	0.483
168	153/168	---	---	ND	---	0.966
169		---	---	ND	---	0.483
170		---	---	ND	---	0.483
171	171/173	---	---	ND	---	0.966
172		---	---	ND	---	0.483
173	171/173	---	---	ND	---	0.966
174		---	---	ND	---	0.483
175		---	---	ND	---	0.483
176		---	---	ND	---	0.483
177		---	---	ND	---	0.483
178		---	---	ND	---	0.483
179		---	---	ND	---	0.483
180	180/193	---	---	ND	---	0.966

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Lab Sample ID BLANK-63512
Filename P180721B_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
181		---	---	ND	---	0.483
182		---	---	ND	---	0.483
183	183/185	---	---	ND	---	0.966
184		---	---	ND	---	0.483
185	183/185	---	---	ND	---	0.966
186		---	---	ND	---	0.483
187		---	---	ND	---	0.483
188		---	---	ND	---	0.483
189		---	---	ND	---	0.483
190		---	---	ND	---	0.483
191		---	---	ND	---	0.483
192		---	---	ND	---	0.483
193	180/193	---	---	ND	---	0.966
194		---	---	ND	---	0.724
195		---	---	ND	---	0.724
196		---	---	ND	---	0.724
197	197/200	---	---	ND	---	1.45
198	198/199	---	---	ND	---	1.45
199	198/199	---	---	ND	---	1.45
200	197/200	---	---	ND	---	1.45
201		---	---	ND	---	0.724
202		---	---	ND	---	0.724
203		---	---	ND	---	0.724
204		---	---	ND	---	0.724
205		---	---	ND	---	0.724
206		---	---	ND	---	0.724
207		---	---	ND	---	0.724
208		---	---	ND	---	0.724
209		---	---	ND	---	0.724

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	CBLKSY
Lab Sample ID	BLANK-63512
Filename	P180721B_06

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
DecachloroBiphenyls	ND
Total PCBs	ND

ND = Not Detected

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-63513		
Filename	P180721B_03	Matrix	Water (QC Matrix)
Total Amount Extracted	945 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 19:55
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	0.996	100	2.0	0.992	50
3	1.0	0.978	98	2.0	1.06	53
4	1.0	1.07	107	2.0	0.945	47
15	1.0	1.03	103	2.0	1.12	56
19	1.0	0.953	95	2.0	1.07	53
37	1.0	0.813	81	2.0	1.35	68
54	1.0	0.932	93	2.0	0.963	48
81	1.0	0.870	87	2.0	1.45	73
77	1.0	0.928	93	2.0	1.35	67
104	1.0	0.985	98	2.0	0.926	46
105	1.0	0.923	92	2.0	1.37	69
114	1.0	1.01	101	2.0	1.32	66
118	1.0	0.968	97	2.0	1.36	68
123	1.0	0.959	96	2.0	1.33	67
126	1.0	0.977	98	2.0	1.43	72
155	1.0	0.921	92	2.0	0.950	48
156/157	2.0	1.86	93	4.0	2.54	63
167	1.0	0.954	95	2.0	1.24	62
169	1.0	0.944	94	2.0	1.43	71
188	1.0	1.00	100	2.0	0.960	48
189	1.0	1.01	101	2.0	1.30	65
202	1.0	0.991	99	2.0	1.00	50
205	1.0	1.03	103	2.0	1.20	60
206	1.0	1.03	103	2.0	1.13	56
208	1.0	0.993	99	2.0	1.06	53
209	1.0	1.05	105	2.0	1.08	54

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-63514		
Filename	P180721B_04	Matrix	Water (QC Matrix)
Total Amount Extracted	959 mL	Dilution	NA
ICAL ID	P180721B02	Extracted	07/17/2018 13:15
CCal Filename(s)	P180721B_01	Analyzed	07/21/2018 20:54
Method Blank ID	BLANK-63512	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.04	104	2.0	1.11	55	
3	1.0	1.04	104	2.0	1.12	56	
4	1.0	1.13	113	2.0	0.983	49	
15	1.0	1.09	109	2.0	1.15	57	
19	1.0	0.903	90	2.0	1.23	61	
37	1.0	0.939	94	2.0	1.11	63	I
54	1.0	0.903	90	2.0	1.04	52	
81	1.0	0.914	91	2.0	1.44	72	
77	1.0	0.968	97	2.0	1.33	67	
104	1.0	0.991	99	2.0	1.00	50	
105	1.0	1.01	101	2.0	1.41	71	
114	1.0	1.02	102	2.0	1.42	71	
118	1.0	0.938	94	2.0	1.45	73	
123	1.0	0.953	95	2.0	1.45	72	
126	1.0	0.969	97	2.0	1.56	78	
155	1.0	1.04	104	2.0	0.987	49	
156/157	2.0	2.03	102	4.0	2.67	67	
167	1.0	0.986	99	2.0	1.36	68	
169	1.0	0.931	93	2.0	1.49	74	
188	1.0	1.01	101	2.0	1.13	56	
189	1.0	0.995	100	2.0	1.51	75	
202	1.0	0.961	96	2.0	1.19	60	
205	1.0	1.02	102	2.0	1.33	67	
206	1.0	1.07	107	2.0	1.26	63	
208	1.0	0.921	92	2.0	1.27	63	
209	1.0	0.944	94	2.0	1.20	60	

R = Recovery outside of method 1668A control limits
Nn = Result obtained from alternate analysis
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
ng = Nanograms
I = Interference

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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	PACE Charlotte		
Spike 1 ID	LCS-63513	Spike 2 ID	LCSD-63514
Spike 1 Filename	P180721B_03	Spike 2 Filename	P180721B_04

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	100	104	3.9
4-MoCB	3	98	104	5.9
2,2'-DiCB	4	107	113	5.5
4,4'-DiCB	15	103	109	5.7
2,2',6-TrCB	19	95	90	5.4
3,4,4'-TrCB	37	81	94	14.9
2,2',6,6'-TeCB	54	93	90	3.3
3,3',4,4'-TeCB	77	93	97	4.2
3,4,4',5-TeCB	81	87	91	4.5
2,2',4,6,6'-PeCB	104	98	99	1.0
2,3,3',4,4'-PeCB	105	92	101	9.3
2,3,4,4',5-PeCB	114	101	102	1.0
2,3',4,4',5-PeCB	118	97	94	3.1
2,3',4,4',5'-PeCB	123	96	95	1.0
3,3',4,4',5-PeCB	126	98	97	1.0
2,2',4,4',6,6'-HxCB	155	92	104	12.2
(156/157)	156/157	93	102	9.2
2,3',4,4',5,5'-HxCB	167	95	99	4.1
3,3',4,4',5,5'-HxCB	169	94	93	1.1
2,2',3,4',5,6,6'-HpCB	188	100	101	1.0
2,3,3',4,4',5,5'-HpCB	189	101	100	1.0
2,2',3,3',5,5',6,6'-OcCB	202	99	96	3.1
2,3,3',4,4',5,5',6-OcCB	205	103	102	1.0
2,2',3,3',4,4',5,5',6-NoCB	206	103	107	3.8
2,2',3,3',4,5,5',6,6'-NoCB	208	99	92	7.3
Decachlorobiphenyl	209	105	94	11.1

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

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