Intergovernmental Agreement for Remedial Investigation and Source Control Measures

DEQ No. LQVC-NWR-03-10

Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report

City of Portland Outfall Project
ECSI No. 2425

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PREPARED BY

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
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Abbreviations and Acronyms

AOPC	area of potential concern
BES	City of Portland Bureau of Environmental Services
BIP	Burgard Industrial Park
City	City of Portland
CSO	Combined sewer overflow
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
IGA	Intergovernmental Agreement
J	estimated concentration
JSCS	Joint Source Control Strategy
LWG	Lower Willamette Group
MDL	method detection limit
µg/Kg	microgram(s) per kilogram
mg/Kg	milligram(s) per kilogram
µg/L	microgram(s) per liter
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbons
PBOT	City of Portland Bureau of Transportation
PCB	polychlorinated biphenyls
Port	Port of Portland
RI	remedial investigation
RM	river mile
SAP	Sampling and Analysis Plan
SCD	source control decision
SCE	source control evaluation
SLV	screening level value
SSI	Schnitzer Steel Industries
T4	Port of Portland Terminal 4
TOC	total organic carbon

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SECTION 1

Introduction

This report presents the results of City of Portland (City) Bureau of Environmental Services (BES) source investigation activities conducted along North Lombard Street within and in the vicinity of Outfall Basins 52C and 53. Previously, as part of its 2007-2008 Portland Harbor stormwater screening effort (BES, 2010a), the City determined that further source tracing was warranted in Basins 52C and 53 to identify possible sources of polychlorinated biphenyls (PCBs), which were detected in whole-basin stormwater discharges from these outfalls at concentrations higher than expected, given the absence of identified or suspected PCB sources in either basin. Subsequently, the City conducted source investigation activities to evaluate potential pathways by which PCBs could enter the City conveyance systems and to trace potential sources of PCB concentrations detected in Outfall 52C and 53 stormwater screening samples (BES, 2010a). Results of the North Lombard Street PCB source investigation and data evaluation indicate the following:

- PCBs were detected in loose surface solids (sweepings) and catch basin solids from locations along North Lombard Street, a truck route serving adjacent industrial properties.
- Adjacent industrial properties have higher onsite PCB concentrations compared with those detected along the truck route.
- PCB concentrations along the truck route are highest near properties with known PCB sources and decrease with distance away from these sources.
- Lower and non-detected PCB concentrations on roads away from the truck route support that vehicle drag-out from industrial properties with documented PCB contamination (i.e., detected PCB concentration in onsite media [e.g., soil, stormwater, stormwater solids]) is the likely pathway for PCBs to enter the Basin 52C and 53 conveyance systems.
- Implementation of source control measures at adjacent industrial sites with documented PCB contamination will reduce offsite migration of PCBs to the City's stormwater conveyance system and reduce loading from the outfalls.

This investigation is part of the City's ongoing Remedial Investigation associated with the Portland Harbor City of Portland Outfall Project being conducted pursuant to the August 13, 2003, Intergovernmental Agreement (IGA) between the Oregon Department of Environmental Quality (DEQ) and the City. The data collected under this investigation supplement ongoing work by DEQ and the City to identify and control discharges to the Basin 52C and Basin 53 stormwater conveyance systems from upland sites.

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SECTION 2

Background

2.1 Basin 52C Physical System and Setting

Outfall 52C is a 36-inch diameter storm-only pipe that discharges on the east side of the Willamette River at approximately river mile (RM) 4.4. Figure 1 provides an overview of the basin boundary and stormwater conveyance system. The outfall drains approximately 22 acres of light industrial-zoned properties near the Port of Portland's (Port) Terminal 4 (T4). Port-owned properties, located primarily west (riverward) of North Lombard Street, comprise approximately 85 percent of the basin. The Port property is largely comprised of paved parking. The remaining basin area includes drainage from an approximate 0.25 mile stretch of North Lombard Street and runoff from roofs and parking lots at three properties located east of North Lombard.

2.2 Basins 53 Physical System and Setting

Outfall 53 is a 48-inch diameter outfall pipe with a separated stormwater system that discharges on the east side of the Willamette River at approximately RM 5.2. Figure 2 provides an overview of the stormwater basin boundary and conveyance system. The outfall basin drains approximately 21 acres of primarily residentially-zoned properties in the St. Johns area including approximate 0.25 miles of North Lombard Street. Most of the basin drainage is from residential roads. The outfall is also a combined sewer overflow (CSO) point, which was controlled in 1995. Downspout disconnections (i.e., onsite stormwater infiltration) were required for residential properties in the St. Johns Neighborhood as part of the City's CSO Abatement Program to reduce overall stormwater discharge to the basin.

2.3 Source Tracing Contaminants

Outfall 52C discharges to the Willamette River into an area of Portland Harbor identified by the U.S. Environmental Protection Agency (EPA) as an area of potential concern (AOPC 6), based on elevated concentrations of PCBs, metals (cadmium, copper, silver, zinc), polycyclic aromatic hydrocarbons (PAHs), total toxic equivalency, semi-volatile organic compounds (benzyl alcohol, carbazole, phenol), and delta-hexachlorocyclo-hexane detected in inriver sediment (EPA, 2010). In addition to OF 52C, 16 non-City outfalls (13 active and 3 inactive) drain to AOPC 6.

Outfall 53, located approximately 0.5 miles south of Basin 52C, discharges to the Willamette River into an area that is not designated as an AOPC. Eight non-City outfalls (4 active, 3 inactive, 1 unknown) are located in the immediate vicinity of OF 53.

As part of its Portland Harbor stormwater screening effort, the City evaluated stormwater data collected in Basins 52C and 53 in 2007-2008. The stormwater samples were analyzed for a broad suite of chemicals to identify stormwater contaminants potentially warranting further source tracing in the basin. The stormwater sampling activities and results are described in the City's *Stormwater Evaluation Report* (BES, 2010a) and summarized below. Based on statistical analyses of harborwide stormwater data from outfalls discharging to the Willamette River within the

Portland Harbor Study Area, the City determined that further source tracing was warranted in Basins 52C and 53 to identify possible sources of PCBs. Basin 52C and Basin 53 PCB concentrations were higher than would be expected given the absence of identified or suspected PCB sources in either basin (BES, 2010a).

SECTION 3

Previous Basin Investigations

Two stormwater and stormwater solids investigations were conducted that indicated slightly elevated PCB concentrations at Outfalls 52C and 53, which prompted this PCB source investigation. These investigations included:

- The Port's 2005 T4 Recontamination Evaluation at Outfall 52C (with City sampling within the basin); and
- Lower Willamette Group (LWG) 2007-2008 Stormwater Loading Evaluation (sampling at Outfalls 52C and 53 conducted by the Port and the City).

The following sections summarize PCB results from stormwater and storm solid investigations conducted in Basins 52C and Basin 53 in 2005 and 2007-2008.

3.1 2005 Storm Solids Sampling in Basin 52C

In June 2005, as part of the Terminal 4 Early Action, the Port collected a sediment trap sample in Outfall 52C; total PCBs were detected at 270 micrograms per kilogram (µg/Kg) (see Appendix A). Also in 2005, the City collected catch basin and inline solids samples at four locations within the Basin 52C conveyance system including:

- Two inline solids samples along North Roberts Avenue at manholes AAB529 and AAB524; and
- Two catch basin solids samples along North Lombard Street at catch basins ANF064 and ANF065.

Total PCBs were detected at concentrations of 269 µg/Kg and 390 µg/Kg in catch basins ANF064 and ANF065, respectively. Total PCBs were not detected in inline solids samples collected from manholes along North Roberts Avenue. Sampling locations and total PCB concentrations for the 2005 sampling events are shown on Figure 3. Analytical laboratory reports for the City's investigation are provided in Appendix A.

3.2 2007-2008 LWG Stormwater and Stormwater Solids Sampling

The LWG conducted stormwater sampling (including water and sediment traps) in 2007 and 2008 to determine land use loading rates for a recontamination analysis in Portland Harbor (Anchor QEA, 2011). As part of that effort, the Port collected stormwater and sediment trap samples from several drainage basins discharging within Terminal 4 in 2007, including Basin 52C and Basin 53. In 2008, the City collected additional stormwater samples from Outfall 53 to develop a more robust data set. Results are documented in the *LWG's Stormwater Loading Calculation Methods* report (Anchor QEA, 2011).

Total PCB congeners in stormwater samples collected at Outfall 52C and Outfall 53 were detected at average concentrations of 0.049 micrograms per liter (µg/L) and 0.051 µg/L, respectively. The 2007-2008 stormwater sampling locations and PCB results for stormwater

samples collected by the Port and LWG, from both City and non-City outfalls within the vicinity of the North Lombard truck route are presented in Appendix B and shown on Figure B-1.

Total PCB congener results from the sediment traps at Outfall 52C and Outfall 53 were 661 µg/Kg and 377 µg/Kg, respectively (Anchor QEA, 2011). The 2007-2008 sediment trap sampling locations and PCB results for samples collected by the Port and LWG, from both City and non-City outfalls within the vicinity of the North Lombard truck route are presented on Figures 3 and 4.

3.3 Evaluation of Data

In 2010, the City evaluated stormwater data collected from stormwater outfalls discharging to the Willamette River within the Portland Harbor Study Area and presented the results in the *Stormwater Evaluation Report*[1] (BES, 2010a). Ranked stormwater PCB data collected in 2007-2008 by the City, the LWG, and the Port are shown in Figure B-2 of Appendix B[2]. This figure shows that PCB concentrations at Outfalls 52C and 53 fall within the middle range of concentrations detected. The City determined that further source tracing was warranted in Basins 52C and 53 because PCB concentrations in stormwater were higher than would be expected given the land use in the basins and there were no identified or suspected industrial PCB sources located within either basin. The PCB concentrations fall within the lower range of PCB concentrations using DEQ's reference concentration range for industrial sites in Portland Harbor (DEQ, 2010a).

[1] Note that the City's evaluation used one value that was later rejected by the LWG as an outlier during data processing because the Relative Percent Difference for the normal and duplicate values did not meet quality assurance goals (see Table 4-2 in Anchor QEA, 2011). Therefore, the mean and geomean of total PCB congeners was higher in the City's evaluation compared with the LWG evaluation.

[2] Total PCB stormwater concentrations in City and non-City stormwater outfall basins are ranked by the geometric mean data collected in 2007-2008 (BES, 2010a).

SECTION 4

Potential Upland PCB Sources

Potential upland PCB sources that could account for or contribute to the detected concentrations in stormwater and stormwater solid samples collected from Basins 52C and 53 were identified by reviewing available environmental information on properties located within and in the vicinity of these basins. Information reviewed included:

- Oregon DEQ Environmental Cleanup Site Information (ECSI) database to track sites in Oregon with known or potential contamination from hazardous substances, and to document sites where DEQ has determined that no further action is required.
- DEQ's Facility Profiler which includes permitted air and water discharges, hazardous and solid waste sites, cleanup sites, and leaking and underground storage tanks. This database contains information on closed facilities, completed cleanups, and past operations as well as data on current operations and activities.
- Facilities permitted by DEQ under the National Pollutant Discharge Elimination System (NPDES) industrial stormwater discharge program
- Portland Harbor Superfund Remedial Investigation and Feasibility Study (RI/FS) documents.

Table 1 summarizes available information on properties located within and in the vicinity of Basin 52C and Basin 53. Appendix C provides additional information regarding environmental conditions at the identified properties. Based on review of this information, documented PCB sources were not identified at properties directly discharging stormwater to Basins 52C or Basin 53 or on properties contiguous to these basins. However, both basins drain a portion of North Lombard Street which is designated by the City' Bureau of Transportation (PBOT) as a preferred truck route (PBOT, 2008) and is used by trucks and other vehicles serving nearby industrial properties (i.e., facilities) within and adjacent to the Terminal 4 and Burgard Industrial areas. Several facilities in this area have documented PCB contamination including:

- Boydstun Metal Works (ECSI No. 2362)
- Northwest Pipe Company (ECSI No. 138)
- Port of Portland, Terminal 4 Slip 1 (ECSI No. 2356)
- Port of Portland, Terminal 4 Slip 3 (ECSI No. 272)
- RoMar Transportation Systems, Inc. (ECSI No. 2437)
- Schnitzer - Burgard Industrial Park (ECSI No. 5324)
- Schnitzer Steel Industries (ECSI No. 2355)
- Union Carbide (ECSI No. 176).

Elevated PCB concentrations have been detected in stormwater and stormwater solids at or near all of these properties (see Table 1, Figure 3, Figure B-1 in Appendix B, and Appendix C). Figure B-2 (Appendix B) presents ranked PCB stormwater concentrations in both City and non-

City outfalls. The highest PCB concentrations were detected in stormwater samples in non-City outfall basins located northwest of Basins 52C and 53 where numerous ECSI sites are located near the N. Lombard truck route. PCB-contaminated solids from these industrial facilities with documented PCB contamination could be migrating offsite via vehicle drag-out and entering catch basins along North Lombard Street that drain to Basins 52C and 53 and thus, the City conducted the North Lombard Street PCB investigation, described in Section 5.

SECTION 5

North Lombard Street PCB Source Investigation

5.1 Sampling Approach

The 2010 solids investigation was designed to evaluate whether offsite migration of PCBs may be occurring onto North Lombard Street from industrial properties with documented PCB contamination located northwest of Basin 52C and Basin 53 via vehicle drag-out. If vehicle drag-out has occurred or is occurring, PCB concentrations would be expected to be highest near the source and to decrease with distance from the source.

Sample locations were selected to provide information on the spatial distribution of PCB concentrations along North Lombard Street. Selected locations include North Lombard Street catch basins within and between the two City basins, as well as portions of North Lombard adjacent to industrial properties with known PCBs contamination. Roadway surface solids (sweepings) and catch basin solid samples were collected along the west side of North Lombard Street (i.e., the traffic lane used by traffic traveling south) to assess whether PCBs were being transported from identified properties with documented PCB contamination via vehicle traffic into Basin 52C and Basin 53. The 2010 solids sampling locations are described in the table below and shown on Figure 3.

2010 Solids Investigation Summary

Sample Identification	Location	Sample Type
N. Sever Road at N. Burgard Road	Loose roadway surface solids (sweepings) on N. Sever Road just before the intersection with N. Burgard Road	Composite
Schnitzer Access Road at N. Lombard Street	Loose roadway surface solids (sweepings) at intersection of Schnitzer Access Road and N. Lombard Street	Composite
N-Lombard 1: catch basins ANF066, ANF067, ANF069, ANF072, ANF074 and ANJ736	Catch basin solids - west side of N. Lombard Street, discharging to Outfall 52C	Composite of identified catch basins
N-Lombard 2: catch basins ANK382, ANK385, ANK394 and ANK400	Catch basin solids - west side of N. Lombard Street between Outfall 52C and Outfall 53, discharging to Columbia Slough	Composite of identified catch basins
N-Lombard 3: catch basins ANF032, ANF036, ANF037, ANF041, and ANF042	Catch basin solids - west side of N. Lombard, discharging to Outfall 53	Composite of identified catch basins

The City conducted the solids sampling activities on September 7-8, 2010 in accordance with the *Sampling and Analysis Plan* (SAP) developed in August 2010 (BES, 2010b). Roadway surface solid and catch basin solid samples were analyzed for PCB Aroclors, PCB congeners, total solids, and total organic carbon (TOC). Photographs of the sampling locations taken during sampling activities are provided in Appendix D. Field notes taken during sample collection and processing activities are provided in Appendix E.

5.2 Summary of Results

PCB Aroclors and PCB congeners were detected in all solids samples collected along portions of North Lombard Street. Tables 2 and 3 summarize the laboratory analytical results and include the Portland Harbor Joint Source Control Strategy (JSCS; DEQ and EPA, 2005) screening level values (SLVs) for reference. Total PCB Aroclors and total PCB congener concentrations are displayed on Figure 3. The laboratory reports and data review memoranda are provided in Appendix F. Most total PCB concentrations in the 2010 solid samples are elevated relative to DEQ's industrial PCB reference concentrations (DEQ, 2010a).

SECTION 6

Data Evaluation

PCB Aroclor and PCB congener data were collected during the North Lombard PCB investigation. While both Aroclor and congener data provide useful information regarding the magnitude and types of PCBs present, this memorandum focuses on the magnitude and distribution of the total PCB congener concentrations (i.e., concentration gradients) to identify major source areas and/or pathways for PCBs entering Basins 52C and 53. PCB congener analyses are considered to be more accurate for estimating total PCB concentrations, because congener analysis relies on the identification and quantification of all 209 individual PCB congeners while PCB Aroclor analyses rely on the identification of only a few "characteristic chromatograph peaks" (Bernhard and Petron, 2001).

For contaminants that preferentially partition to organic material, such as PCBs, concentration gradients may be more easily observed when the data are normalized to organic carbon content than when they are presented in dry weight (WDOE, 1992). The following table presents TOC-normalized total PCB concentrations.

Summary of 2010 Solids Investigation Results

Sample Location		TOC (%)	Total PCB Congeners (µg/Kg)	TOC-normalized Total PCB Congeners (µg/Kg)	Total PCB Aroclors (µg/Kg)	TOC-normalized Total PCB Aroclors (µg/Kg)
Intersection of N. Sever Road and N. Burgard Rd.	*North*	5.6	377	6,732	155	2,768
Intersection of Schnitzer Access Road and N. Lombard Street		3.3	1,260	38,182	652	19,758
N. Lombard 1 – Basin 52C catch basins (duplicate)		6.4 (5.7)	1,840 (1,050)	28,750 (18,421)	597 J (1,136 J)	9,328 J (19,930 J)
N. Lombard 2: catch basins between Basins 52C and 53		7.3	440	6,027	641 J	8,781 J
N. Lombard 3: Basin 53 catch basins	*South*	12.7	340	2,677	246	1,937

Notes: TOC = total organic carbon
J = estimated laboratory concentration.
µg/Kg = micrograms per kilogram

The spatial distribution of total PCB congener concentrations in North Lombard source investigation solid samples, shown on Figure 4, indicates PCB source area(s) are located north of Basins 52C and 53. PCB concentrations are generally highest in samples collected closer to facilities with documented PCB contamination and decrease with distance in samples collected further south on North Lombard Street. TOC-normalized total PCB congener concentrations indicate a strong trend of decreasing PCB concentrations from north to south along North Lombard Street (see Table above).

Elevated PCB concentrations detected in stormwater solids (Figure 4) and stormwater (see Appendix B) collected at or near industrial facilities with documented PCB contamination suggest PCB-contaminated solids (e.g., soil, dust, particulates) are available that can be picked up and transported offsite by site stormwater, vehicle traffic (drag-out), or wind erosion. The investigation results show higher concentrations on the truck route and concentrations below laboratory method detection limits (MDLs) on the North Roberts side street, which suggests that offsite migration of PCB-contaminated solids via vehicle tracking from industrial facilities north of Basins 52C and 53 to North Lombard Street is the likely pathway of PCBs observed in the 2007-2008 basin-scale stormwater and sediment trap data collected within the basins.

To confirm that vehicle tracking onto the N Lombard truck route is the source of PCBs, PCB data collected from City stormwater facilities constructed in residential areas were compared to the results of the North Lombard PCB Investigation results. The City's Sustainable Stormwater program collects soil samples from stormwater management facilities to evaluate accumulation of pollutants in these facilities[3]. In 2011, PCBs were analyzed in storm solids that represent runoff from roadways and parking areas to a number of stormwater facilities. Figure 5 shows the total PCB Aroclor soil concentrations in the North Portland residential roadway facilities; the concentrations range from below MDLs to 28.1 µg/Kg. The total PCB Aroclor concentration detected at the Basin 53 residential roadway stormwater facility (28.1 µg/Kg) was an order-of-magnitude lower than total PCB Aroclor concentrations detected from North Lombard catch basin solids. The low concentrations of PCBs in these City stormwater facility samples and those on North Roberts confirm that the Basin 52C and Basin 53 stormwater and stormwater solid results are higher than would be expected based on land use and supports the conclusion that vehicle drag-out from adjacent industrial sources is affecting stormwater quality along the North Lombard Truck route.

[3] See http://www.portlandonline.com/bes/index.cfm?c=36055& for the 2010 Stormwater Management Facility Monitoring Report. The 2011 data cited in this report will be included in the biannual 2012 monitoring report expected for completion in December 2012.

SECTION 7

Source Control Activities

Table 1 identifies industrial properties that likely utilize the portion of North Lombard Street that passes through Basins 52C and 53 and the current status of these facilities in DEQ's Environmental Cleanup Program. PCB contamination has been documented at some of these facilities DEQ is currently overseeing stormwater source control evaluations (SCEs) and implementation of source control measures (SCMs) at several of the identified facilities including, but not limited to:

- Schnitzer Steel Industries (SSI). In 2010, as part of improvements to its stormwater conveyance system, SSI began paving a portion of its Burgard facility, consolidated outfalls, and installed a stormwater treatment system intended to capture stormwater on operating portions of the scrap processing area (Schnitzer, 2009; Bridgewater, 2009; DEQ, 2010c). In addition to these SCMs, DEQ has requested that SSI evaluate drag out of contaminated solids via truck traffic.
- Schnitzer – Burgard Industrial Park (BIP). Schnitzer is conducting a number of onsite SCEs of stormwater conveyance systems at the site(Bridgewater, 2010a; 2011a; 2011b) and SCMs have focused on improving best management practices (DEQ, 2012g).
- Northwest Pipe Company (NW Pipe). In 2009, NW Pipe submitted a plan to DEQ focused on paving the southern half of its site (CH2M Hill, 2009).

Source control activities performed under DEQ oversight at these facilities should reduce PCB concentrations entering Basins 52C and 53. However, a better understanding of the potential vehicle tracking contaminant pathway will aid in selecting, implementing, and documenting the effectiveness of SCMs at industrial facilities. DEQ recently revised its National Pollutant Discharge Elimination System (NPDES) industrial stormwater permits, effective July 1, 2012. The revised permit requires industrial facilities to minimize offsite vehicle tracking, which should also help reduce contaminated solids loading to City basins.

In addition to SCMs being conducted at industrial facilities in the area, the City will begin construction of road improvements at the North Burgard Overpass in Summer 2012, which will include roadway treatment swales and rerouting of this stormwater away from the Willamette River. This project is located in the North Lombard corridor just north of Basin 52C. While this project will not reduce tracking, it will capture and treat some of the pollutants tracked onto the roadway. Pollutant tracking from contaminated sites onto this roadway could cause contamination of the swales. The City will continue to coordinate with DEQ to address vehicle tracking issues.

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SECTION 8

Conclusions and Next Steps

Evaluation of the 2010 North Lombard solids source investigation data in conjunction with the findings of other stormwater investigations in the area indicates that offsite migration of contaminated solids from nearby facilities with documented PCB contamination appears to be introducing PCBs into the Basin 52C and Basin 53 conveyance systems. High PCB concentrations detected in stormwater solids (see Figure 4 and Appendix C) and stormwater (see Appendix B) collected at facilities north of Basins 52C and 53, suggest that these facilities likely have PCBs available at the land surface that could be transported offsite via vehicle drag-out. Vehicle drag-out appears to be the primary contaminant migration pathway by which PCB-contaminated solids are transported from nearby industrial properties into the Basin 52C and Basin 53 conveyance systems. Contaminated solids being transported along North Lombard Street appears to be the primary source of PCB contamination to the two City basins.

Due to elevated concentrations of PCBs detected onsite (e.g., soil, stormwater, stormwater solids), several industrial facilities in the vicinity of Basin 52C and Basin 53 are currently conducting stormwater source investigations and implementing SCMs, under DEQ Cleanup Program oversight. These facilities are also covered by NPDES industrial stormwater 1200-Z permits issued by the DEQ Water Quality Program. With forthcoming work under DEQ's Cleanup and Water Quality authorities, PCB loadings from upland sites to Basins 52C and 53 are expected to decline and to result in decreased concentrations in basin stormwater discharges.

Based on the results of this investigation, the potential sources of PCBs to Basins 52C and 53 have been identified and are in appropriate DEQ programs to select and implement source controls. Therefore, no further City source investigation is needed in the Basin 52C and Basin 53 conveyance systems.

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SECTION 9

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Tables

Table 1: Properties Within or Near Outfall Basins 52C and 53

Property [a, b, c]	DEQ Cleanup Site	Stormwater NPDES Coverage	Documented PCB Contamination[d]	DEQ Cleanup Program Status[c, e]	Stormwater Pathway Evaluated Under DEQ Oversight?	Source Control Measures [c, e]
OF52C Properties						
Borden Packaging and Industrial Products/ Momentive Specialty Chemical, Inc. [f]	ECSI 1277	NEC	No	Inactive	No	City's Industrial Stormwater Program notified DEQ that the site is scheduled to decommission a catch basin near the railcar unloading area.
Pioneer Wiping Cloth / American Rag & Metal	No	No	No	--	--	--
Port of Portland Property	No	No	No	--	--	--
Port of Portland T-4 Maintenance	No	No	No	--	--	--
OF53 Properties						
Properties within Basin 53 are residential; there are no identified or suspected sources of PCBs.						
Contiguous or Nearby Properties						
Flint Ink Corporation	ECSI 1753	No	No	Inactive	No	Conditional NFA issued in 2006; stormwater pathway not evaluated.
Harsh Investments (a.k.a., Chemcentral Corporation, Univar USA)	ECSI 878	No	No	Active	No	DEQ selected remedial actions for soil and groundwater in the 2010 ROD. No actions required for stormwater.
Joseph T. Ryerson & Son, Inc.	ECSI 2441	No	NR	Active	In process	In process
Klix Corporation	ECSI 1075	No	Yes	Inactive	No	DEQ conditional NFA issued in 1996. Stormwater pathway not evaluated.
Northwest Container (formerly Union Carbide)	ECSI 176	1200COLS	Yes	Inactive	Yes	DEQ NFA determination. ROD issued in 2009. Focused PCB contaminated soil removal. No actions required for stormwater.
Northwest Pipe Company	ECSI 138	1200Z	Yes	Active	In process	In process. SCMs implemented to date have included partial paving. Installation of a stormwater treatment system planned.
Port of Portland - Terminal 4 Auto Storage	ECSI 172	MS4/1200Z	No	Inactive	No	No stormwater SCMs implemented, DEQ determined pathway insignificant. DEQ NFA issued in June 2004.
Port of Portland, Terminal 4 Slip 1	ECSI 2356	MS4	Yes	Active	Yes	In process. Stormwater SCMs implemented include BMPs and line cleanout. Effectiveness monitoring ongoing.
Port of Portland, Terminal 4 Slip 3	ECSI 272	MS4	No	Active	In process	In process. Stormwater SCMs implemented include BMPs and line cleanout. Effectiveness monitoring ongoing.
Portland Container Repair Corporation	ECSI 2375	1200Z	Yes	Active	In process	Focused PCB contaminated soil removal conducted in July 1994.
RoMar Transportation Systems	ECSI 2437	No	Yes	Inactive	Yes	DEQ NFA and SCD determination in May 2006. Focused PCB contaminated soil removal. No source control measures required for stormwater.
Schnitzer-Burgard Industrial Park includes the following facilities: - Schnitzer Steel Industries (ECSI 2355) - Portland Container Repair Corp (ECSI 2375) - Western Machine Works - Boydston Metal Works/ Portland Blast Media (ECSI 2362)	ECSI 5324	[g]	Yes	Active	In process	In process. SCMs implemented to date include outfall improvements and BMPs. See Schnitzer Steel Industries (ECSI 2355) below.
Schnitzer Steel Industries	ECSI 2355	1200Z	Yes	Active	In process	In process. SCMs implemented to date include improvements to stormwater conveyance system, stormwater treatment system, partial paving. Ongoing stormwater monitoring.

Notes

MS4 = Municipal Separate Storm Sewer System [Joint Permit issued to City of Portland and Port of Portland on January 31, 2011. NPDES Permit #101314.]

NA = Not available

NEC = No exposure certification

NFA= No Further Action determination

NPDES = National Dishcharge Elimination System

NR = not reported in ECSI

PCBs = polychlorinated biphenols

ROD = Record of Decision

SCD = Source Control Decision

SCM = Source Control Measure

(a) Properties were identifed using Oregon DEQ's Facility Profiler database/mapping tool of DEQ regulated or permitted facilities and sites. Available on DEQ's website: http://deq12.deq.state.or.us/fp20/

(b) Portland Harbor RI/FS, Remedial Investigation Report, Draft Final. Prepared for The Lower Willamette Group. Prepared by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, Anchor QEA, LLC. August 29, 2011

(c) DEQ Environmental Cleanup Site Information (ECSI) database Site Summary Reports. Available on DEQ's website: http://www.deq.state.or.us/lq/ecsi/ecsiquery.asp?listtype=lis&listtitle=Environmental+Cleanup+Site%20Information+Database

(d) PCBs detected in onsite media (e.g., soil, stormwater, stormwater solids).

(e) DEQ Portland Harbor May 2012 Milestone Report. Available on DEQ's website: http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/jointsource.htmf

(f) Property is owned by Borden Chemical Inc. and is currently operated by Momentive Speciality Chemical, Inc. Operations are covered under DEQ's NPDES Industrial Stormwater Program. A "no exposure certification" was issued in April 2011.

(g) see Schnitzer Steel Industries (ECSI 2355) and Portland Container Repair Corp. (ECSI 2375)

Table 3
North Lombard Street PCB Source Investigation Results - PCB Congeners

North----------->South

			North of Basin 52C		Basin 52C		Between Basins 52C and 53	Basin 53		
			Intersection of N. Sever Rd and N. Burgard Rd	Intersection of Schnitzer Access Rd and N. Lombard	N. Lombard-1 Composite of Catch Basins ANF066, ANF067, ANF069, ANF072, ANF074, ANJ736		N. Lombard-2 Composite of Catch Basins ANK382, ANK385, ANK394, ANK400	N. Lombard-3 Composite of Catch Basins ANF032, ANF036, ANF037, ANF041, ANF042		
			Roadway Solids (Sweepings)	Roadway Solids (Sweepings)	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids		
			FO105874	FO105875	FO105876	Duplicate FO105879	FO105877	FO105878	JSCS[2] Screening Level Value	
IUPAC Number[1]	**Chemical Name**	**Units**	9/7/2010	9/7/2010	9/7/2010	9/7/2010	9/8/2010	9/8/2010	**Toxicity**	**Bioaccumulation**
Polychlorinated Biphenyl Congeners (EPA 1668A)										
PCB 1	2-MoCB	µg/Kg	0.112	2.26	0.354	0.378	0.122	0.147	--	--
PCB 2	3-MoCB	µg/Kg	0.0539	0.170	0.0634	0.154	0.0506	0.0494	--	--
PCB 3	4-MoCB	µg/Kg	0.105	0.492	0.188	0.340	0.113	0.108	--	--
PCB 4	2,2'-DiCB	µg/Kg	0.697	2.37	1.83	2.82	1.04	0.566	--	--
PCB 5	2,3-DiCB	µg/Kg	0.0413	0.189	0.112	0.111	0.0540	0.0485	--	--
PCB 6	2,3'-DiCB	µg/Kg	0.409	1.75	1.30	1.34	0.566	0.401	--	--
PCB 7	2,4-DiCB	µg/Kg	0.0745	0.307	0.180	0.228	0.101	0.0781	--	--
PCB 8	2,4'-DiCB	µg/Kg	2.04	8.29	6.27	6.05	2.61	2.24	--	--
PCB 9	2,5-DiCB	µg/Kg	0.124	0.490	0.282	0.383	0.163	0.120	--	--
PCB 10	2,6-DiCB	µg/Kg	0.0481	0.178	0.132	0.196	0.0867	0.0448	--	--
PCB 11	3,3'-DiCB	µg/Kg	1.08	0.583	0.768	1.05	1.21	1.61	--	--
PCB 12/13	3,4-DiCB + 3,4'-DiCB	µg/Kg	0.381	1.08	0.704	0.998	0.416	0.411	--	--
PCB 14	3,5-DiCB	µg/Kg	0.0247 U	0.0235 U	0.0244 U	0.0245 U	0.0248 U	0.0246 U	--	--
PCB 15	4,4'-DiCB	µg/Kg	2.69	9.43	6.88	9.91	3.61	2.15	--	--
PCB 16	2,2',3-TriCB	µg/Kg	1.64	7.05	4.58	7.28	2.65	1.56	--	--
PCB 17	2,2',4-TriCB	µg/Kg	1.50	6.22	4.34	6.87	2.31	1.43	--	--
PCB 18/30	2,2',5-TriCB + 2,4,6-TriCB	µg/Kg	2.90	12.9	9.01	13.9	4.59	2.86	--	--
PCB 19	2,2',6-TriCB	µg/Kg	0.455	1.64	1.49	2.14	0.837	0.543	--	--
PCB 20/28	2,3,3'-TriCB + 2,4,4'-TriCB	µg/Kg	8.17	30.3	20.0	31.7	11.1	8.07	--	--
PCB 21/33	2,3,4-TriCB + 2',3,4-TriCB	µg/Kg	3.79	16.9	9.19	16.1	5.47	3.74	--	--
PCB 22	2,3,4'-TriCB	µg/Kg	3.27	12.1	7.26	12.0	4.37	3.09	--	--
PCB 23	2,3,5-TriCB	µg/Kg	0.0247 U	0.0333	0.0244 U	0.0300	0.0248 U	0.0246 U	--	--
PCB 24	2,3,6-TriCB	µg/Kg	0.0247 U	0.267	0.0244 U	0.0245 U	0.0248 U	0.0246 U	--	--
PCB 25	2,3',4-TriCB	µg/Kg	0.525	2.02	1.42	2.19	0.716	0.529	--	--
PCB 26/29	2,3',5-TriCB + 2,4,5-TriCB	µg/Kg	1.25	4.78	3.50	5.25	1.73	1.23	--	--
PCB 27	2,3',6-TriCB	µg/Kg	0.380	1.37	1.10	1.74	0.639	0.411	--	--
PCB 31	2,4',5-TriCB	µg/Kg	6.37	24.4	17.1	26.9	8.80	6.30	--	--
PCB 32	2,4',6-TriCB	µg/Kg	1.53	5.76	4.53	7.05	2.39	1.66	--	--
PCB 34	2',3,5-TriCB	µg/Kg	0.0247 U	0.0799	0.0522	0.0805	0.0299	0.0246 U	--	--
PCB 35	3,3',4-TriCB	µg/Kg	0.258	0.694	0.437	0.713	0.295	0.235	--	--
PCB 36	3,3',5-TriCB	µg/Kg	0.0247 U	0.0235 U	0.0244 U	0.0245 U	0.0248 U	0.0246 U	--	--
PCB 37	3,4,4'-TriCB	µg/Kg	4.24	10.6	7.59	11.0	4.85	3.45	--	--
PCB 38	3,4,5-TriCB	µg/Kg	0.0247 U	0.0418	0.0256	0.0355	0.0248 U	0.0246 U	--	--
PCB 39	3,4',5-TriCB	µg/Kg	0.045	0.168	0.101	0.155	0.0564	0.0439	--	--
PCB 40/41/71	2,2',3,3'-TeCB + 2,2',3,4-TeCB + 2,3',4',6-TeCB	µg/Kg	5.81	17.1	15.9	20.5	8.98	6.40	--	--
PCB 42	2,2',3,4'-TeCB	µg/Kg	2.76	7.90	7.66	9.83	4.18	3.03	--	--
PCB 43/73	2,2',3,5-TeCB + 2,3',5',6-TeCB	µg/Kg	0.213	0.854	0.653	0.909	0.343	0.282	--	--
PCB 44/47/65	2,2',3,5'-TeCB + 2,2',4,4'-TeCB + 2,3,5,6-TeCB	µg/Kg	9.87	24.9	43.2	36.2	14.1	10.6	--	--
PCB 45/51	2,2',3,6-TeCB + 2,2',4,6'-TeCB	µg/Kg	1.66	5.17	4.54	7.01	2.99	2.20	--	--
PCB 46	2,2',3,6'-TeCB	µg/Kg	0.633	1.87	1.66	2.53	1.09	0.795	--	--
PCB 48	2,2',4,5-TeCB	µg/Kg	1.64	5.51	4.89	6.70	2.71	1.98	--	--
PCB 49/69	2,2',4,5'-TeCB + 2,3',4,6-TeCB	µg/Kg	5.13	13.7	22.6	19.4	7.48	5.61	--	--
PCB 50/53	2,2',4,6-TeCB + 2,2',5,6'-TeCB	µg/Kg	1.14	3.34	3.87	4.82	2.00	1.51	--	--
PCB 52	2,2',5,5'-TeCB	µg/Kg	11.8	27.7	90.0	50.7	17.3	13.4	--	--
PCB 54	2,2',6,6'-TeCB	µg/Kg	0.0495 U	0.0520	0.0489 U	0.0642	0.0496 U	0.0492 U	--	--
PCB 55	2,3,3',4-TeCB	µg/Kg	0.0495 U	0.388	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 56	2,3,3',4'-TeCB	µg/Kg	3.44	7.00	10.2	8.50	4.06	3.05	--	--
PCB 57	2,3,3',5-TeCB	µg/Kg	0.0495 U	0.126	0.119 EMPC	0.217	0.0605	0.0627	--	--
PCB 58	2,3,3',5'-TeCB	µg/Kg	0.0495 U	0.0748	0.118 EMPC	0.0882 EMPC	0.0496 U	0.0492 U	--	--
PCB 59/62/75	2,3,3',6-TeCB + 2,3,4,6-TeCB + 2,4,4',6-TeCB	µg/Kg	0.957	2.51	2.25	3.15	1.43	1.05	--	--
PCB 60	2,3,4,4'-TeCB	µg/Kg	1.74	3.85	4.54	4.65	2.12	1.63	--	--
PCB 61/70/74/76	2,3,4,5-TeCB + 2,3',4',5-TeCB + 2,4,4',5-TeCB + 2',3,4,5-TeCB	µg/Kg	13.6	29.6	81.4	42.0	17.1	12.4	--	--
PCB 63	2,3,4',5-TeCB	µg/Kg	0.287	0.771	1.00	0.941	0.394	0.302	--	--
PCB 64	2,3,4',6-TeCB	µg/Kg	4.24	12.4	15.8	15.4	6.39	4.89	--	--
PCB 66	2,3',4,4'-TeCB	µg/Kg	7.39	15.6	26.1	19.7	8.92	6.78	--	--
PCB 67	2,3',4,5-TeCB	µg/Kg	0.241	0.716	0.598	0.809	0.337	0.266	--	--
PCB 68	2,3',4,5'-TeCB	µg/Kg	0.0495 U	0.0586	0.0559	0.071	0.0496 U	0.0492 U	--	--
PCB 72	2,3',5,5'-TeCB	µg/Kg	0.0543	0.121	0.115	0.144	0.0645	0.0548	--	--
PCB 77	3,3',4,4'-TeCB	µg/Kg	**1.26**	**1.59**	**1.68**	**2.08**	**1.11**	**0.847**	--	0.052
PCB 78	3,3',4,5-TeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 79	3,3',4,5'-TeCB	µg/Kg	0.101	0.254	1.08	0.331	0.177	0.0600	--	--
PCB 80	3,3',5,5'-TeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 81	3,4,4',5-TeCB	µg/Kg	**0.0579**	**0.0854**	**0.103** EMPC	**0.0952** EMPC	0.0496 U	0.0492 U	--	0.017
PCB 82	2,2',3,3',4-PeCB	µg/Kg	2.38	4.08	14.2	6.96	2.78	1.86	--	--
PCB 83	2,2',3,3',5-PeCB	µg/Kg	1.27	1.83	9.55	3.57	1.47	0.824	--	--
PCB 84	2,2',3,3',6-PeCB	µg/Kg	4.83	9.26	34.2	16.1	5.96	4.4	--	--
PCB 85/116/117	2,2',3,4,4'-PeCB + 2,3,4,5,6-PeCB + 2,3,4',5,6-PeCB	µg/Kg	2.8	4.68	18.4	7.75	2.98	2.35	--	--
PCB 86/87/97/108/119/125	2,2',3,4,5-PeCB + 2,2',3,4,5'-PeCB + 2,2',3',4,5-PeCB + 2,3,3',4,5'-PeCB + 2,3',4,4',6-PeCB + 2',3,4,5,6'-PeCB	µg/Kg	12.7	22	88.7	38.8	14.8	10.5	--	--
PCB 88/91	2,2',3,4,6-PeCB + 2,2',3,4',6-PeCB	µg/Kg	2.28	4.31	15.1	7.10	2.83	2.11	--	--
PCB 89	2,2',3,4,6'-PeCB	µg/Kg	0.210	0.426	0.892	0.581	0.252	0.196	--	--
PCB 90/101/113	2,2',3,4',5-PeCB + 2,2',4,5,5'-PeCB + 2,3,3',5',6-PeCB	µg/Kg	16.7	33.5	126	52.2	20.0	14.5	--	--

Table 3
North Lombard Street PCB Source Investigation Results - PCB Congeners

North----------->South

			North of Basin 52C		Basin 52C		Between Basins 52C and 53	Basin 53		
			Intersection of N. Sever Rd and N. Burgard Rd	Intersection of Schnitzer Access Rd and N. Lombard	N. Lombard-1 Composite of Catch Basins ANF066, ANF067, ANF069, ANF072, ANF074, ANJ736		N. Lombard-2 Composite of Catch Basins ANK382, ANK385, ANK394, ANK400	N. Lombard-3 Composite of Catch Basins ANF032, ANF036, ANF037, ANF041, ANF042		
			Roadway Solids (Sweepings)	Roadway Solids (Sweepings)	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids		
			FO105874	FO105875	FO105876	Duplicate FO105879	FO105877	FO105878	JSCS[2] Screening Level Value	
IUPAC Number[1]	Chemical Name	Units	9/7/2010	9/7/2010	9/7/2010	9/7/2010	9/8/2010	9/8/2010	Toxicity	Bioaccumulation
PCB 92	2,2',3,5,5'-PeCB	µg/Kg	3.03	6.46	22.8	9.83	3.72	2.72	--	--
PCB 93/98/100/102	2,2',3,5,6-PeCB + 2,2',3',4,6-PeCB + 2,2',4,4',6-PeCB + 2,2',4,5,6'-PeCB	µg/Kg	0.546	1.28	2.82	1.89	0.758	0.539	--	--
PCB 94	2,2',3,5,6'-PeCB	µg/Kg	0.0797	0.174	0.381	0.258	0.107	0.0882	--	--
PCB 95	2,2',3,5',6-PeCB	µg/Kg	14.1	33.9	103	49.3	16.8	13.1	--	--
PCB 96	2,2',3,6,6'-PeCB	µg/Kg	0.130	0.293	0.575	0.485	0.185	0.135	--	--
PCB 99	2,2',4,4',5-PeCB	µg/Kg	6.12	11.1	43.8	18.0	6.93	5.25	--	--
PCB 103	2,2',4,5',6-PeCB	µg/Kg	0.0782	0.155	0.458	0.246	0.0985	0.0729	--	--
PCB 104	2,2',4,6,6'-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 105	2,3,3',4,4'-PeCB	µg/Kg	**7.48**	**10.4**	**43.0**	**20.9**	**8.38**	**5.52**	--	0.17
PCB 106	2,3,3',4,5-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 107/124	2,3,3',4',5-PeCB + 2',3,4,5,5'-PeCB	µg/Kg	0.728	1.07	5.04	2.01	0.764	0.580	--	--
PCB 109	2,3,3',4,6-PeCB	µg/Kg	0.996	1.78	5.88	2.54	1.07	0.792	--	--
PCB 110/115	2,3,3',4',6-PeCB + 2,3,4,4',6-PeCB	µg/Kg	21.4	39.5	137	58.8	23.5	16.7	--	--
PCB 111	2,3,3',5,5'-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 112	2,3,3',5,6-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 114	2,3,4,4',5-PeCB	µg/Kg	**0.414**	**0.618**	**2.75**	**1.24**	**0.470**	**0.320**	--	0.17
PCB 118	2,3',4,4',5-PeCB	µg/Kg	**16.8**	**23.5**	**119**	**46.5**	**17.8**	**12.8**	--	0.12
PCB 120	2,3',4,5,5'-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0578	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 121	2,3',4,5',6-PeCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 122	2',3,3',4,5-PeCB	µg/Kg	0.236	0.347	1.33	0.517	0.232	0.166	--	--
PCB 123	2',3,4,4',5-PeCB	µg/Kg	**0.381**	**0.414**	**2.37**	**0.924**	**0.247**	**0.268**	--	0.21
PCB 126	3,3',4,4',5-PeCB	µg/Kg	**0.280**	**0.143** EMPC	**0.216** EMPC	**0.119** EMPC	**0.0853** EMPC	**0.137**	--	0.00005
PCB 127	3,3',4,5,5'-PeCB	µg/Kg	0.0495 U	0.0671	0.201	0.0735	0.0496 U	0.0492 U	--	--
PCB 128/166	2,2',3,3',4,4'-HxCB + 2,3,4,4',5,6-HxCB	µg/Kg	3.69	7.43	18.9	9.18	3.99	2.76	--	--
PCB 129/138/163	2,2',3,3',4,5-HxCB + 2,2',3,4,4',5'-HxCB + 2,3,3',4',5,6-HxCB	µg/Kg	23.2	77.7	118	54.4	24.7	17.5	--	--
PCB 130	2,2',3,3',4,5'-HxCB	µg/Kg	1.54	3.47	8.15	3.92	1.68	1.17	--	--
PCB 131	2,2',3,3',4,6-HxCB	µg/Kg	0.383	0.851	2.31	1.07	0.418	0.320	--	--
PCB 132	2,2',3,3',4,6'-HxCB	µg/Kg	7.42	23.7	41.0	19.4	8.49	5.96	--	--
PCB 133	2,2',3,3',5,5'-HxCB	µg/Kg	0.254	0.948	1.29	0.625	0.274	0.215	--	--
PCB 134/143	2,2',3,3',5,6-HxCB + 2,2',3,4,5,6'-HxCB	µg/Kg	1.06	3.79	6.84	2.87	1.18	0.840	--	--
PCB 135/151	2,2',3,3',5,6'-HxCB + 2,2',3,5,5',6-HxCB	µg/Kg	6.19	42.1	23.7	13.3	6.59	5.85	--	--
PCB 136	2,2',3,3',6,6'-HxCB	µg/Kg	2.47	14.1	13.1	6.58	2.97	2.31	--	--
PCB 137	2,2',3,4,4',5-HxCB	µg/Kg	1.05	1.36	8.30	3.11	1.27	0.903	--	--
PCB 139/140	2,2',3,4,4',6-HxCB + 2,2',3,4,4',6'-HxCB	µg/Kg	0.380	0.684	2.48	1.05	0.411	0.324	--	--
PCB 141	2,2',3,4,5,5'-HxCB	µg/Kg	3.72	20.9	17.3	7.98	3.86	3.01	--	--
PCB 142	2,2',3,4,5,6-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 144	2,2',3,4,5',6-HxCB	µg/Kg	0.745	6.11	4.49	2.22	0.640	0.669	--	--
PCB 145	2,2',3,4,6,6'-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 146	2,2',3,4',5,5'-HxCB	µg/Kg	2.45	11.9	12.7	5.98	2.74	1.98	--	--
PCB 147/149	2,2',3,4',5,6-HxCB + 2,2',3,4',5',6-HxCB	µg/Kg	15.1	83.2	73.1	32.8	15.9	13.1	--	--
PCB 148	2,2',3,4',5,6'-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0582	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 150	2,2',3,4',6,6'-HxCB	µg/Kg	0.0495 U	0.0506	0.0908	0.0493	0.0496 U	0.0492 U	--	--
PCB 152	2,2',3,5,6,6'-HxCB	µg/Kg	0.0495 U	0.0469 U	0.110	0.0539	0.0496 U	0.0492 U	--	--
PCB 153/168	2,2',4,4',5,5'-HxCB + 2,3',4,4',5',6-HxCB	µg/Kg	16.5	76.2	77.6	34.3	16.5	13.3	--	--
PCB 154	2,2',4,4',5,6'-HxCB	µg/Kg	0.139	0.297	0.619	0.286	0.134	0.118	--	--
PCB 155	2,2',4,4',6,6'-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 156/157	2,3,3',4,4',5-HxCB + 2,3,3',4,4',5'-HxCB	µg/Kg	**3.05**	**6.01**	**17.1**	**8.21**	**3.75**	**2.43**	--	0.21
PCB 158	2,3,3',4,4',6-HxCB	µg/Kg	2.28	7.08	12.1	5.56	2.39	1.65	--	--
PCB 159	2,3,3',4,5,5'-HxCB	µg/Kg	0.0495 U	0.173 EMPC	0.0569 EMPC	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 160	2,3,3',4,5,6-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 161	2,3,3',4,5',6-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 162	2,3,3',4',5,5'-HxCB	µg/Kg	0.168	0.0894 EMPC	0.578	0.283	0.155	0.134	--	--
PCB 164	2,3,3',4',5',6-HxCB	µg/Kg	1.51	5.18	6.25	3.25	1.49	1.09	--	--
PCB 165	2,3,3',5,5',6-HxCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 167	2,3',4,4',5,5'-HxCB	µg/Kg	**0.948**	**1.89**	**5.04**	**2.52**	**1.08**	**0.791**	--	0.21
PCB 169	3,3',4,4',5,5'-HxCB	µg/Kg	0.0495 U	**0.199**	**0.0591** EMPC	0.0489 U	0.0496 U	**0.0678** EMPC	--	0.00021
PCB 170	2,2',3,3',4,4',5-HpCB	µg/Kg	4.34	21.4	12.0	6.64	3.92	2.90	--	--
PCB 171/173	2,2',3,3',4,4',6-HpCB + 2,2',3,3',4,5,6-HpCB	µg/Kg	1.36	8.11	3.97	2.06	1.19	0.998	--	--
PCB 172	2,2',3,3',4,5,5'-HpCB	µg/Kg	0.824	3.58	1.96	1.08	0.705	0.632	--	--
PCB 174	2,2',3,3',4,5,6'-HpCB	µg/Kg	4.06	31.8	10.8	5.15	3.61	3.87	--	--
PCB 175	2,2',3,3',4,5',6-HpCB	µg/Kg	0.202	1.47	0.529	0.285	0.187	0.193	--	--
PCB 176	2,2',3,3',4,6,6'-HpCB	µg/Kg	0.613	5.05	1.67	0.814	0.535	0.585	--	--
PCB 177	2,2',3,3',4',5,6-HpCB	µg/Kg	2.68	17.6	6.52	3.34	2.25	2.09	--	--
PCB 178	2,2',3,3',5,5',6-HpCB	µg/Kg	0.980	7.37	2.13	1.07	0.780	0.876	--	--
PCB 179	2,2',3,3',5,6,6'-HpCB	µg/Kg	2.02	16.9	4.86	2.21	1.67	2.20	--	--
PCB 180/193	2,2',3,4,4',5,5'-HpCB + 2,3,3',4',5,5',6-HpCB	µg/Kg	9.53	58.4	24.8	11.3	7.99	7.73	--	--
PCB 181	2,2',3,4,4',5,6-HpCB	µg/Kg	0.0495 U	0.0793	0.199	0.111	0.0791	0.0492 U	--	--
PCB 182	2,2',3,4,4',5,6'-HpCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 183/185	2,2',3,4,4',5',6-HpCB + 2,2',3,4,5,5',6-HpCB	µg/Kg	3.20	23.0	8.59	4.11	2.88	3.01	--	--
PCB 184	2,2',3,4,4',6,6'-HpCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 186	2,2',3,4,5,6,6'-HpCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 187	2,2',3,4',5,5',6-HpCB	µg/Kg	5.31	37.0	12.3	5.76	4.23	5.09	--	--
PCB 188	2,2',3,4',5,6,6'-HpCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--

Table 3
North Lombard Street PCB Source Investigation Results - PCB Congeners

North----------->South

			North of Basin 52C		Basin 52C		Between Basins 52C and 53	Basin 53		
			Intersection of N. Sever Rd and N. Burgard Rd	Intersection of Schnitzer Access Rd and N. Lombard	N. Lombard-1 Composite of Catch Basins ANF066, ANF067, ANF069, ANF072, ANF074, ANJ736		N. Lombard-2 Composite of Catch Basins ANK382, ANK385, ANK394, ANK400	N. Lombard-3 Composite of Catch Basins ANF032, ANF036, ANF037, ANF041, ANF042		
			Roadway Solids (Sweepings)	Roadway Solids (Sweepings)	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids	Catch Basin Solids		
			FO105874	FO105875	FO105876	Duplicate FO105879	FO105877	FO105878	JSCS[2] Screening Level Value	
IUPAC Number[1]	Chemical Name	Units	9/7/2010	9/7/2010	9/7/2010	9/7/2010	9/8/2010	9/8/2010	Toxicity	Bioaccumulation
PCB 189	2,3,3',4,4',5,5'-HpCB	µg/Kg	0.197	0.986	0.573	0.333	0.212	0.190	--	--
PCB 190	2,3,3',4,4',5,6-HpCB	µg/Kg	0.862	**4.09**	**2.17**	1.19	0.731	0.630	--	1.2
PCB 191	2,3,3',4,4',5',6-HpCB	µg/Kg	0.175	0.992	0.484	0.251	0.157	0.117	--	--
PCB 192	2,3,3',4,5,5',6-HpCB	µg/Kg	0.0495 U	0.0469 U	0.0489 U	0.0489 U	0.0496 U	0.0492 U	--	--
PCB 194	2,2',3,3',4,4',5,5'-OcCB	µg/Kg	2.21	12.7	5.6	2.22	1.92	2.56	--	--
PCB 195	2,2',3,3',4,4',5,6-OcCB	µg/Kg	0.840	5.04	1.96	0.789	0.642	0.800	--	--
PCB 196	2,2',3,3',4,4',5,6'-OcCB	µg/Kg	1.23	7.23	2.76	1.22	1.03	1.37	--	--
PCB 197/200	2,2',3,3',4,4',6,6'-OcCB + 2,2',3,3',4,5,6,6'-OcCB	µg/Kg	0.323	2.76	0.946	0.386	0.360	0.461	--	--
PCB 198/199	2,2',3,3',4,5,5',6-OcCB + 2,2',3,3',4,5,5',6'-OcCB	µg/Kg	2.83	13.8	5.31	2.69	2.35	3.77	--	--
PCB 201	2,2',3,3',4,5',6,6'-OcCB	µg/Kg	0.358	2.53	0.744	0.341	0.309	0.559	--	--
PCB 202	2,2',3,3',5,5',6,6'-OcCB	µg/Kg	0.550	3.08	1.01	0.559	0.480	0.994	--	--
PCB 203	2,2',3,4,4',5,5',6-OcCB	µg/Kg	1.66	8.23	3.29	1.63	1.37	2.01	--	--
PCB 204	2,2',3,4,4',5,6,6'-OcCB	µg/Kg	0.0742 U	0.0704 U	0.0733 U	0.0734 U	0.0744 U	0.0738 U	--	--
PCB 205	2,3,3',4,4',5,5',6-OcCB	µg/Kg	0.129	0.799	0.306	0.118	0.108	0.120	--	--
PCB 206	2,2',3,3',4,4',5,5',6-NoCB	µg/Kg	1.41	4.50	2.25	1.93	1.48	2.14	--	--
PCB 207	2,2',3,3',4,4',5,6,6'-NoCB	µg/Kg	0.182	0.563	0.279	0.218	0.179	0.275	--	--
PCB 208	2,2',3,3',4,5,5',6,6'-NoCB	µg/Kg	0.335	0.984	0.496	0.527	0.420	0.644	--	--
PCB 209	Decachlorobiphenyl	µg/Kg	0.540	0.595	0.476	0.652	0.930	0.538	--	--
	Total Monochlorobiphenyls	µg/Kg	0.271	2.92	0.605	0.872	0.286	0.304	--	--
	Total Dichlorobiphenyls	µg/Kg	7.58	24.7	18.5	23.1	9.86	7.67	--	--
	Total Trichlorobiphenyls	µg/Kg	36.3	137	91.7	145	50.8	35.2	--	--
	Total Tetrachlorobiphenyls	µg/Kg	74.0	183	340	257	103	77.2	--	--
	Total Pentachlorobiphenyls	µg/Kg	116	211	798	347	132	95.9	--	--
	Total Hexachlorobiphenyls	µg/Kg	94.2	395	471	219	101	76.4	--	--
	Total Heptachlorobiphenyls	µg/Kg	36.4	238	93.6	45.7	31.1	31.1	--	--
	Total Octachlorobiphenyls	µg/Kg	10.1	56.2	21.9	9.95	8.57	12.6	--	--
	Total Nonachlorobiphenyls	µg/Kg	1.93	6.05	3.02	2.68	2.08	3.06	--	--
	Total Decachlorobiphenyls	µg/Kg	0.540	0.595	0.476	0.652	0.930	0.538	--	--
	Total PCBs[3]	µg/Kg	**377**	**1,260**	**1,840**	**1,050**	**440**	**340**	676	0.39

Notes:

MoCB = Monochlorobiphenyl

DiCB = Dichlorobiphenyl

TriCB = Trichlorobiphenyl

TeCB = Tetrachlorobiphenyl

PeCB = Pentachlorobiphenyl

HeCB = Hexachlorobiphenyl

HpCB = Heptachlorobiphenyl

OcCB = Octachlorobiphenyl

NoCB = Nonachlorobiphenyl

-- No JSCS screening level available.

EMPC = Estimated Maximum Possible Concentration.

U = The analyte was not detected above the reported sample quantification limit.

µg/Kg = micrograms per kilogram.

[1] IUPAC - International Union of Pure and Applied Chemistry.

[2] JSCS SLVs- Portland Harbor Joint Source Control Strategy Screening Level Values (DEQ/EPA Final December 2005, Amended July 2007).

[3] Total homologs and total congener concentrations are calculated by assigning "0" to undetected and EMPC-qualified constituents.

= concentration exceeds JSCS Toxicity Screening Level Value.

bold = concentration exceeds JSCS Bioaccumulation Screening Level Value.

Figures

LEGEND

- Outfall Basin 52C
- City Outfall
- Non-City Outfall
- Storm Line
- Manhole (MH)
- Catch Basin (CB)
- DEQ ECSI Site
- Stormwater Permit
- Tax Lot
- River Mile Tenths

N

0 275 550
Feet

FIGURE 1
Outfall Basin 52C Overview

Disclaimer:
Information contained on this map is accurate according to available records, however the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published.

Prepared By:
GSI, September 3, 2012
005_SC\RI\OF_Basin_52C\NLombard_PCBs

Source:
City of Portland BES, Aerial Photo 2010

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204-1912

LEGEND

- Outfall Basin 53
- City Outfall
- Non-City Outfall
- Storm Line
- Manhole (MH)
- Catch Basin (CB)
- DEQ ECSI Site
- Stormwater Permit
- Tax Lot
- River Mile Tenths

N

0 275 550
Feet

FIGURE 2
Outfall Basin 53 Overview

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005_SC\RI\OF_Basin_52C\
NLombard_PCBs

Source:
City of Portland BES,
Aerial Photo 2010

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FIGURE 3

Basins 52C and 53
Solids Results
Total PCBs

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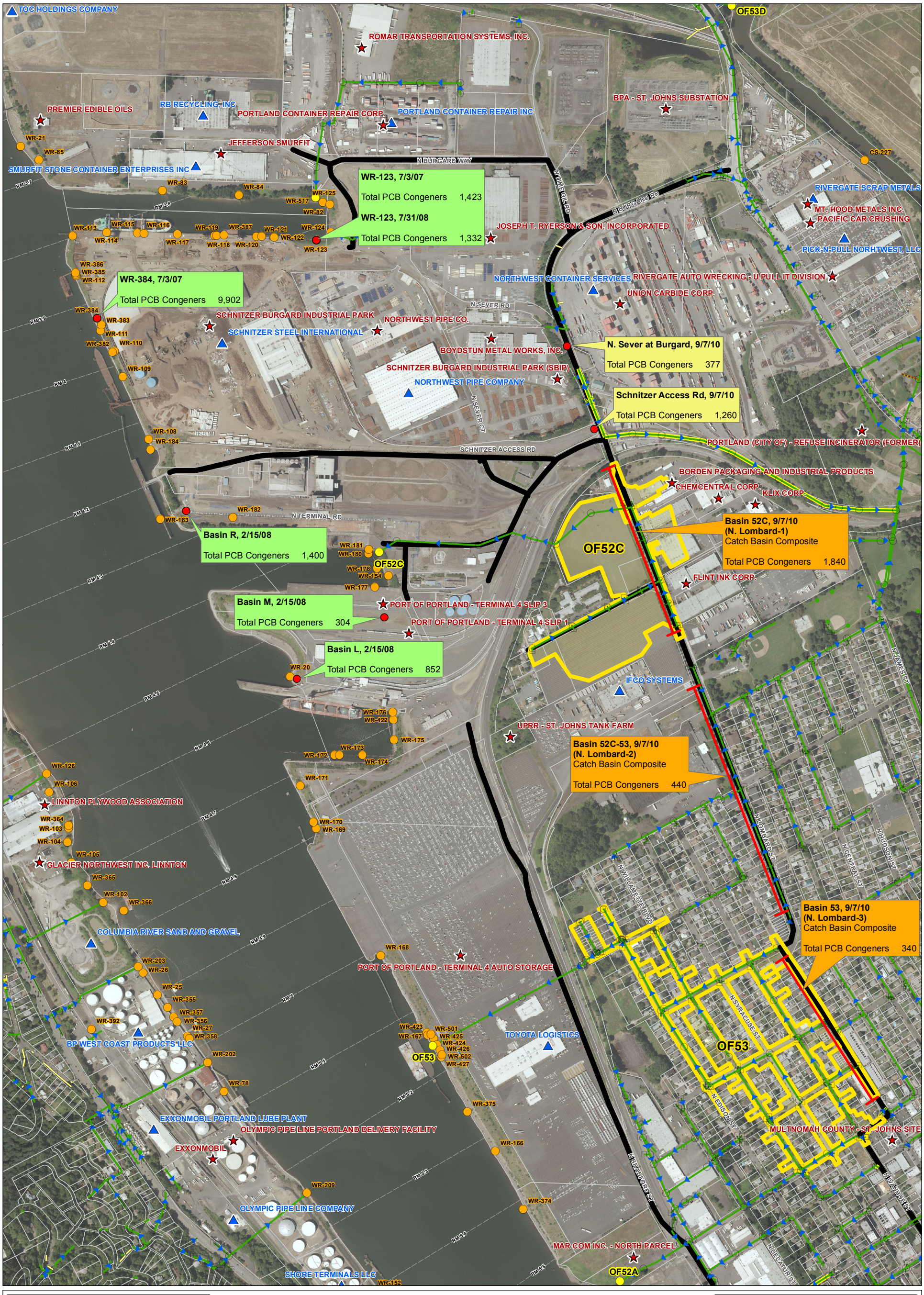

LEGEND

- Sample Location
- Composite Sample
- Inline Solids Sample
- Surface Solids Sample
- Sediment Trap Sample
- Preferred Truck Route (including HWY 30)
- Outfall Basins 52C & 53
- City Outfall
- Non-City Outfall
- Storm Line
- Manhole (MH)
- Catch Basin (CB)
- DEQ ECSI Site
- Stormwater Permit
- Tax Lot
- River Mile Tenths

NOTES:

- All solids results presented in micrograms per kilogram (µg/Kg).
- Sediment trap data from Anchor QEA, 2011
- Preferred truck route from PBOT, 2008

N

0 350 700
Feet

FIGURE 4

Basins 52C and 53
Solids Results in Vicinity of N. Lombard Truck Route
Total PCB Congeners

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Prepared By:
GSI, September 3, 2012
005_SC\RI\OF_Basin_52C\NLombard_PCBs

Source:
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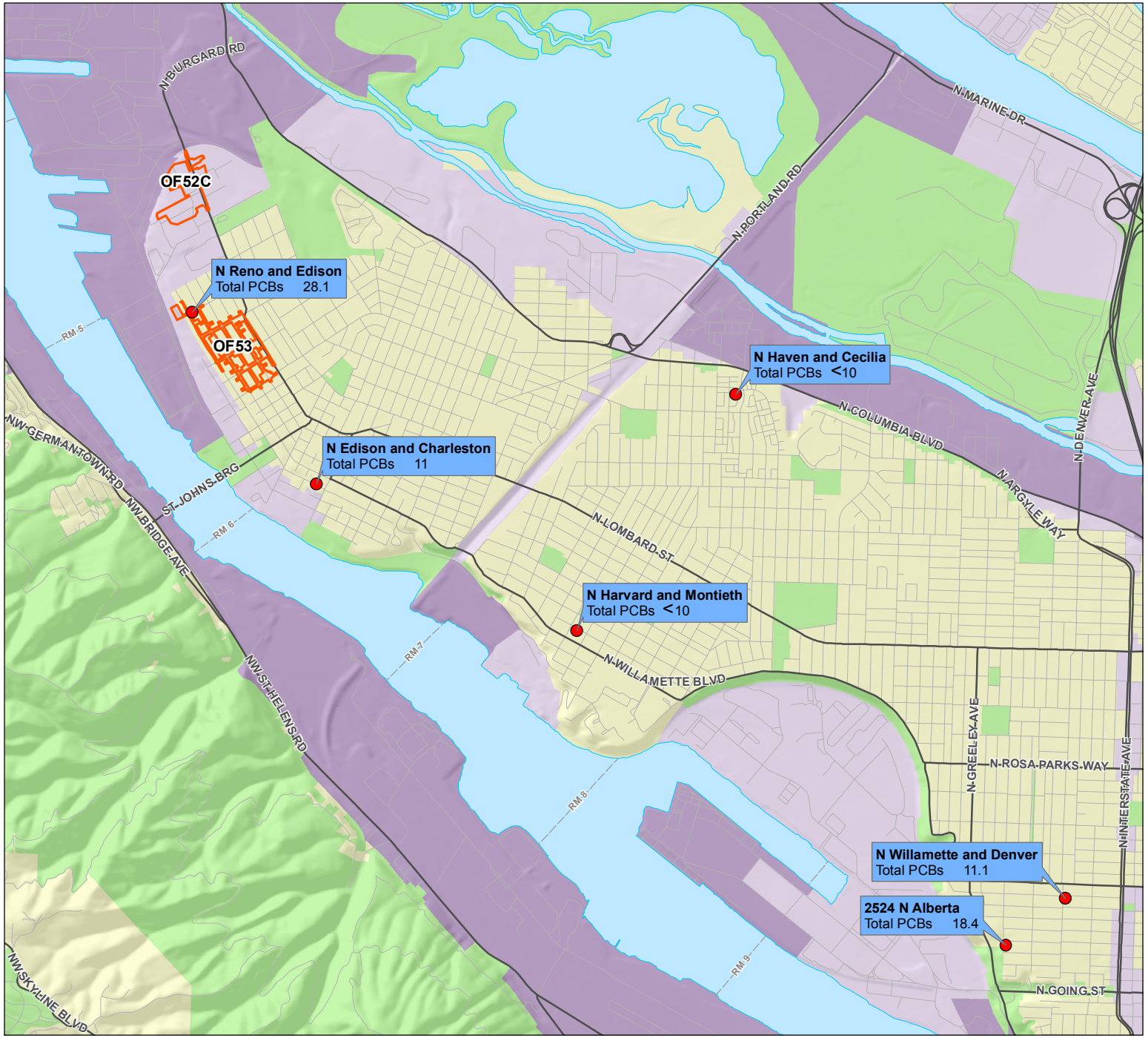

LEGEND

- North Portland Sample Location
- Stormwater Solids Sample
- Outfall Basins 52C & 53
- River Miles
- Major Roads
- Minor Roads
- Major Waterbodies

Land Use

- Heavy Industrial
- Light Industrial
- Residential and Commercial
- Open Space

N

0 1,600 3,200
Feet

FIGURE 5

Basins 52C and 53
BES Stormwater Management
2011 North Portland Soil Sample Locations
Total PCB Aroclors

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Prepared By:
GSI, September 12, 2012
005_SC\RI\OF_Basin_52C\NLombard_PCBs

Source:
City of Portland BES, Aerial Photo 2010

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
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Portland Oregon, 97204-1912

APPENDIX A

2005 STORMWATER, SEDIMENT TRAP AND INLINE SOLIDS DATA

- Port of Portland T4 2005 Stormwater and Sediment Trap Data Summary
- City 2005 Basin 52C Inline Solids Investigation Laboratory Reports

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PORT OF PORTLAND T4 2005 STORMWATER AND SEDIMENT TRAP DATA SUMMARY

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TABLE N-3
STORMWATER SOURCE DATA FOR ANNUAL MASS LOADING CALCULATIONS

RECONTAMINATION ANALYSIS
PORT OF PORTLAND, PORTLAND, OREGON

Subarea	Drainage Basin	Basin Data Used[a]	TSS (mg/L)	Organics Concentration in Solids				Inorganics Concentration in Solids									
				Total PAHs[b,c] (mg/kg)	BEP (mg/kg)	Total PCBs[b,d] (µg/kg)	Σ DDT[b,e] (µg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Berth 401	M	Q	33	13	1.9	0.19	18.4	4.93	0.726	72.9	39.4	73.8	0.083	26.5	0.3	0.167	247
	N	Q	33	13	1.9	0.19	18.4	4.93	0.726	72.9	39.4	73.8	0.083	26.5	0.3	0.167	247
	O	Q/O	73	13	1.9	0.19	18.4	12.8	1.64	63.9	77.2	495	0.304	49.2	23.5	0.496	681
	Q	Q	33	13	1.9	0.19	18.4	4.93	0.726	72.9	39.4	73.8	0.083	26.5	0.3	0.167	247
	R	Q	33	13	1.9	0.19	18.4	4.93	0.726	72.9	39.4	73.8	0.083	26.5	0.3	0.167	247
	S	Q	33	13	1.9	0.19	18.4	4.93	0.726	72.9	39.4	73.8	0.083	26.5	0.3	0.167	247
	T	T	23	24	8.3	270	36.3	4.6	1.75	207	124	393	0.206	33.4	0.2	0.62	738
Wheeler Bay	L	L/Q	17	198	1.9	410	22.5	5.85	3.23	57.2	85.9	248	0.041	36.6	1.3	0.621	1380
Slip 3	D	D/C	6	27	12.0	399	95.6	5.80	1.47	118	82	351	0.083	35.4	0.4	0.221	615
	J	L/Q	17	198	1.9	410	22.5	5.85	3.23	57.2	85.9	248	0.041	36.6	1.3	0.621	1380
	K	L/Q	17	198	1.9	410	22.5	5.85	3.23	57.2	85.9	248	0.041	36.6	1.3	0.621	1380
Berth 414	D	D/C	6	27	12.0	399	95.6	5.80	1.47	118	82	351	0.083	35.4	0.4	0.221	615

Notes:
a. For drainage basins that were not sampled, source term contaminant concentration were assigned from basin with similar land use and other site-specific conditions.
b. Total concentrations are calculated using the detected concentrations of individual constituents. Non-detects are treated as zeros. If all constituents are non-detect, the total concentration is reported as non-detect using the highest detection level.
c. Swartz, 1999, which MacDonald et al., 2000a references as the source of the PAH screening levels, describes the total PAH criteria as the sum of the following polycyclic aromatic compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene.
d. MacDonald et al., 2000b, which MacDonald et al., 2000a references as the source of the PCB screening levels, does not describe which individual Aroclors make up the total PCB criteria. It was assumed that total PCBs consisted of all the Aroclors that were analyzed for (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Aroclor 1262, and Aroclor 1268).
e. ΣDDTs criteria represents the sum of the following compounds: 2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 2,4'-DDT, 4,4'-DDT.

Note that Basin T is City OF 52C

From: **Appendix N- Terminal 4 Recontamination Analysis**. Draft Report. November 2006. Prepared for the Port of Portland by BBL Arcadis.

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CITY 2005 BASIN 52C INLINE SOLIDS INVESTIGATION
LABORATORY REPORTS

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Groundwater Solutions, Inc.
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Laboratory Data QA/QC Review
Upland Source Control Investigation
City Outfall Basin 52C

To: File

From: Eric Collins, RG – GSI

Robyn Cook – GSI

Date: January 3, 2006

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated during source control investigation sampling and analyses recently conducted by the City of Portland in Outfall Basin 52C.

The laboratory analysis for these source control program samples were completed by two subcontracted laboratories. The following analyses were conducted by each laboratory:

- STL Laboratory
    - Metals (EPA Methods 6010B and 7471A)
    - Polychlorinated Biphenyls (EPA Method 8082)
    - Semivolatile Organics (EPA Method 8270-SIM)
    - Pesticides (EPA Method 8081A)
- North Creek Analytical
    - Total Petroleum Hydrocarbons – Hydrocarbon Identification (NWTPH-HCID Method)
    - Total Petroleum Hydrocarbons – Diesel Range Extended (NWTPH-Dx Method)

Each of the report packages is attached

This QA/QC review is based upon the available documentation supplied from each laboratory. The QA/QC review of the analytical data consisted of reviewing the following for each laboratory report:

- Chain-of-custody complete and correct
- Analysis within holding times

- Chemicals of interest in method blanks
- Surrogate recoveries within accuracy control limits
- Laboratory blank spike recoveries within accuracy control limits
- Laboratory blank spike duplicate results within analytical precision control limits
- Matrix spike recoveries within accuracy control limits
- Matrix spike duplicate results within analytical precision control limits

The results of the laboratory report QA/QC review are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures were adequate and the sample integrity maintained through the sample collection and delivery process.

Analysis Holding Times

Semi-Volatile Organic (SVOCs) Analyses
All samples were extracted and analyzed within the required holding times.

Total Metal Analyses
All samples were extracted and analyzed within the required holding times.

Petroleum Hydrocarbons Analyses
All samples were extracted and analyzed within the required holding times.

Polychlorinated Biphenyls (PCBs) Analyses
All samples were extracted and analyzed within the required holding times.

Pesticides Analyses
All samples were extracted and analyzed within the required holding times.

Method Blanks

Method blanks were processed during the laboratory analysis of SVOCs, PCBs, pesticides, petroleum hydrocarbons and metals. No PCBs, pesticides, petroleum hydrocarbons or metals were detected in the method blanks. A low detection of one analyte, bis(2-ethylhexyl)phthalate was detected in the method blank associated with SVOC analysis. However, the analyte was detected at significantly higher concentrations in each of the samples; therefore, no data are qualified.

Surrogate Recoveries

Surrogate recoveries were completed during the laboratory analysis of SVOCs, PCBs and pesticides. All surrogate recoveries were within laboratory control limits for SVOC and pesticide analyses. Surrogates in two samples, as well as in the matrix spike and matrix spike duplicate associated with PCB analysis were outside of acceptance limits. Therefore, PCB results

are qualified as estimates and flagged with a "J." Reporting limits are also qualified as estimates and are flagged with a "UJ."

Laboratory Control Sample Recoveries

Laboratory control samples were processed during the laboratory analyses of SVOCs, PCBs, pesticides, petroleum hydrocarbons and metals. All laboratory control spike recoveries were within laboratory control limits for the analyses of PCBs, pesticides, total metals and petroleum hydrocarbons. Laboratory control spike recoveries were outside laboratory control limits for five SVOCs (2-methylnaphthalene, flourene, phenanthrene, flouranthene and benzo(g,h,i)perylene). Therefore, detected results for these analytes are qualified as estimates and flagged with a "J."

Laboratory Control Sample Duplicates

Laboratory blank spike duplicates were processed during the laboratory analyses of SVOCs, PCBs, pesticides, and metals. The recoveries of the laboratory blank spike duplicates were within laboratory control limits for the analyses of total metals. The recovery of the laboratory spike duplicate for one SVOC analyte (flouranthene), one pesticide analyte (endrin) and two PCB aroclors (1242 and 1260) were outside laboratory control limits. Therefore, reported results for these analytes are qualified as estimates and flagged with a "J."

Matrix Spike Recoveries

A matrix spike and matrix spike duplicate was processed during the laboratory analysis of PCBs. The matrix spike duplicate recovery was outside of the laboratory control limit for aroclors 1242 and 1260. These data are already qualified as estimates.

Special Note

Mercury was designated as having "LCS, LCSD, MS, MSD, MD or surrogate exceed[ing] the control limit" but the laboratory sheets do not designate which of these were outside of laboratory control limits. The laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) were within acceptable limits. The control limit exceedance appears to be associated with the matrix spike (MS) or duplicate (MSD), method duplicate (MD) or surrogate, but the data are not available. Due to a lack in clarity, the reported results are qualified as estimates and flagged with a "J."

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Amended Report

November 18, 2005

Jennifer Shackelford
City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

RE: Portland Harbor

Enclosed are the results of analyses for samples received by the laboratory on 10/26/05 17:15.
The following list is a summary of the NCA Work Orders contained in this report.
If you have any questions concerning this report, please feel free to contact me.

Amended Report: All results reported here supercede any previously reported results.

Work	Project	ProjectNumber
P5J1030	Portland Harbor	36238

Thank You,

Howard Holmes, Project Manager

www.ncalabs.com

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IL-52C-AAB520CB1-1005	P5J1030-01	Soil	10/25/05 10:17	10/26/05 17:15
IL-52C-AAB520CB2-1005	P5J1030-02	Soil	10/25/05 10:38	10/26/05 17:15
IL-52C-AAB524-1005	P5J1030-03	Soil	10/25/05 11:08	10/26/05 17:15

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Amended Report

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor**	
6543 N. Burlington Ave.	Project Number:	36238	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	11/18/05 07:39

Analytical Case Narrative

North Creek Analytical - Portland

P5J1030

Amended report
The sample IDs were corrected at the clients request.

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Hydrocarbon Identification per NW-TPH Methodology

North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P5J1030-01 Soil	**IL-52C-AAB520CB1-1005**			**Sampled: 10/25/05 10:17**						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	13.9	mg/kg dry	1x	5101312	10/28/05	10/29/05 03:14	
Diesel Range Hydrocarbons	"	**DET**	-----	34.8	"	"	"	"	"	**A-01**
Heavy Oil Range Hydrocarbons	"	**DET**	-----	69.6	"	"	"	"	"	**A-01**
Surrogate(s): 1-Chlorooctadecane		*Recovery: 156%*		*Limits: 50 - 150 %*	"				"	***S-02***
P5J1030-02 Soil	**IL-52C-AAB520CB2-1005**			**Sampled: 10/25/05 10:38**						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	19.5	mg/kg dry	1x	5101312	10/28/05	10/29/05 05:22	
Diesel Range Hydrocarbons	"	**DET**	-----	48.7	"	"	"	"	"	**A-01**
Heavy Oil Range Hydrocarbons	"	**DET**	-----	97.4	"	"	"	"	"	**A-01**
Surrogate(s): 1-Chlorooctadecane		*Recovery: 54.6%*		*Limits: 50 - 150 %*	"				"	
P5J1030-03 Soil	**IL-52C-AAB524-1005**			**Sampled: 10/25/05 11:08**						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	-----	17.2	mg/kg dry	1x	5101312	10/28/05	10/29/05 06:26	
Diesel Range Hydrocarbons	"	**DET**	-----	42.9	"	"	"	"	"	**A-02**
Heavy Oil Range Hydrocarbons	"	**DET**	-----	85.8	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 50.2%*		*Limits: 50 - 150 %*	"				"	

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup

North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P5J1030-01 Soil	**IL-52C-AAB520CB1-1005**			**Sampled: 10/25/05 10:17**						
Diesel Range Organics	NWTPH-Dx	**404**	-----	142	mg/kg dry	10x	5110231	11/04/05	11/05/05 14:56	**A-01**
Heavy Oil Range Hydrocarbons	"	**1150**	-----	283	"	"	"	"	"	**A-01**
Surrogate(s): 1-Chlorooctadecane		*Recovery: NR*		*Limits: 50 - 150 %*		"			"	***S-02***
P5J1030-02 Soil	**IL-52C-AAB520CB2-1005**			**Sampled: 10/25/05 10:38**						
Diesel Range Organics	NWTPH-Dx	**174**	-----	149	mg/kg dry	10x	5110231	11/04/05	11/05/05 14:56	**A-01**
Heavy Oil Range Hydrocarbons	"	**960**	-----	299	"	"	"	"	"	**A-01**
Surrogate(s): 1-Chlorooctadecane		*Recovery: 83.0%*		*Limits: 50 - 150 %*		"			"	
P5J1030-03 Soil	**IL-52C-AAB524-1005**			**Sampled: 10/25/05 11:08**						
Diesel Range Organics	NWTPH-Dx	ND	-----	160	mg/kg dry	10x	5110231	11/04/05	11/05/05 15:30	**R-05**
Heavy Oil Range Hydrocarbons	"	**794**	-----	321	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 74.6%*		*Limits: 50 - 150 %*		"			"	

North Creek Analytical - Portland

Howard Holmes, Project Manager

Amended Report

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Percent Dry Weight (Solids) per Standard Methods

North Creek Analytical - Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P5J1030-01	**Soil**	**IL-52C-AAB520CB1-1005**			**Sampled: 10/25/05 10:17**						
% Solids		NCA SOP	**87.5**	-----	1.00	% by Weight	1x	5101405	10/31/05	11/01/05 09:59	
P5J1030-02	**Soil**	**IL-52C-AAB520CB2-1005**			**Sampled: 10/25/05 10:38**						
% Solids		NCA SOP	**83.5**	-----	1.00	% by Weight	1x	5101405	10/31/05	11/01/05 09:59	
P5J1030-03	**Soil**	**IL-52C-AAB524-1005**			**Sampled: 10/25/05 11:08**						
% Solids		NCA SOP	**78.6**	-----	1.00	% by Weight	1x	5101405	10/31/05	11/01/05 09:59	

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Hydrocarbon Identification per NW-TPH Methodology - Laboratory Quality Control Results

North Creek Analytical - Portland

QC Batch: 5101312 **Soil Preparation Method: EPA 3550 Fuels**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5101312-BLK1)								**Extracted: 10/28/05 09:00**						
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	20.0	mg/kg	1x	--	--	--	--	--	--	10/28/05 17:36	
Diesel Range Hydrocarbons	"	ND	---	50.0	"	"	--	--	--	--	--	--	"	
Heavy Oil Range Hydrocarbons	"	ND	---	100	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 119%*			*Limits: 50-150%*	"							*10/28/05 17:36*	
Duplicate (5101312-DUP1)							**QC Source: P5J1030-01**			**Extracted: 10/28/05 09:00**				
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	16.1	mg/kg dry	1x	ND	--	--	--	18.2%	(50)	10/29/05 02:10	
Diesel Range Hydrocarbons	"	DET	---	40.2	"	"	588	--	--	--	2.85%	"	"	A-01
Heavy Oil Range Hydrocarbons	"	DET	---	80.4	"	"	3040	--	--	--	1.66%	"	"	A-01
Surrogate(s): 1-Chlorooctadecane		*Recovery: 152%*			*Limits: 50-150%*	"							*10/29/05 02:10*	*S-02*
Duplicate (5101312-DUP2)							**QC Source: P5J1030-02**			**Extracted: 10/28/05 09:00**				
Gasoline Range Hydrocarbons	NWTPH HCID	ND	---	21.7	mg/kg dry	1x	ND	--	--	--	NR	(50)	10/29/05 07:31	
Diesel Range Hydrocarbons	"	DET	---	54.2	"	"	227	--	--	--	24.8%	"	"	A-01
Heavy Oil Range Hydrocarbons	"	DET	---	108	"	"	886	--	--	--	17.0%	"	"	A-01
Surrogate(s): 1-Chlorooctadecane		*Recovery: 54.1%*			*Limits: 50-150%*	"							*10/29/05 07:31*	

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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method with Acid/Silica Gel Cleanup - Laboratory Quality Control Results

North Creek Analytical - Portland

QC Batch: 5110231 **Soil Preparation Method: EPA 3550 Fuels**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5110231-BLK1)								**Extracted: 11/04/05 14:00**						
Diesel Range Organics	NWTPH-Dx	ND	---	12.5	mg/kg	1x	--	--	--	--	--	--	11/05/05 10:55	
Heavy Oil Range Hydrocarbons	"	ND	---	25.0	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 102%*			*Limits: 50-150%*	"							*11/05/05 10:55*	
LCS (5110231-BS1)								**Extracted: 11/04/05 14:00**						
Diesel Range Organics	NWTPH-Dx	138	---	12.5	mg/kg	1x	--	125	110%	(50-150)	--	--	11/05/05 11:30	
Heavy Oil Range Hydrocarbons	"	75.5	---	25.0	"	"	--	75.0	101%	"	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 113%*			*Limits: 50-150%*	"							*11/05/05 11:30*	
Duplicate (5110231-DUP1)					**QC Source: P5K0128-01**			**Extracted: 11/04/05 14:00**						
Diesel Range Organics	NWTPH-Dx	ND	---	505	mg/kg wet	40x	ND	--	--	--	NR	(50)	11/05/05 12:04	R-05
Heavy Oil Range Hydrocarbons	"	2690	---	1010	"	"	2190	--	--	--	20.5%	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: NR*			*Limits: 50-150%*	"							*11/05/05 12:04*	*S-01*
Duplicate (5110231-DUP2)					**QC Source: P5K0128-02**			**Extracted: 11/04/05 14:00**						
Diesel Range Organics	NWTPH-Dx	ND	---	509	mg/kg wet	40x	ND	--	--	--	NR	(50)	11/05/05 12:04	R-05
Heavy Oil Range Hydrocarbons	"	1650	---	1020	"	"	2430	--	--	--	38.2%	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: NR*			*Limits: 50-150%*	"							*11/05/05 12:04*	*S-01*

North Creek Analytical - Portland

Amended Report

Howard Holmes, Project Manager

www.ncalabs.com

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phone: (541) 383.9310 fax: 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
phone: (907) 563.9200 fax: (907) 563.9210

Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results

North Creek Analytical - Portland

QC Batch: 5101405 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (5101405-DUP1)					**QC Source: P5J0986-01**				**Extracted: 10/31/05 11:11**					
% Solids	NCA SOP	84.7	---	1.00	% by Weight	1x	86.9	--	--	--	2.56%	(20)	11/01/05 09:59	
Duplicate (5101405-DUP2)					**QC Source: P5J0986-04**				**Extracted: 10/31/05 11:11**					
% Solids	NCA SOP	88.2	---	1.00	% by Weight	1x	87.0	--	--	--	1.37%	(20)	11/01/05 09:59	

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
phone: (425) 420.9200 fax: (425) 420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
phone: (509) 924.9200 fax: (509) 924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
phone: (503) 906.9200 fax: (503) 906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
phone: (541) 383.9310 fax: 541.382.7588
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Amended Report

City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

Project Name: **Portland Harbor**
Project Number: 36238
Project Manager: Jennifer Shackelford

Report Created:
11/18/05 07:39

Notes and Definitions

Report Specific Notes:

A-01 - Detected hydrocarbons have distinct peaks that have elution patterns similar to that of PAH's.

A-02 - Detected hydrocarbons appear to be due mainly to overlap from the heavy/oil range as well as biogenic interference.

R-05 - Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.

S-01 - The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.

S-02 - The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR / NA - Not Reported / Not Available

dry - Sample results reported on a dry weight basis. Reporting Limits have been corrected for %Solids.

wet - Sample results and reporting limits reported on a wet weight basis (as received).

RPD - Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E 1st Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
20332 Empire Ave, Ste F1, Bend, OR 97701-5712 541-383-9310 FAX 382-7588
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: P5J1030

NCA CLIENT: City of Portland, BES

REPORT TO: Peter Abrams
ADDRESS: 6543 N. Burlington Ave.
Portland, OR 97203
PHONE: 503 823 5533 FAX:

INVOICE TO: WPCL
6543 N. Burlington Ave.
Portland, OR 97203

P.O. NUMBER:

PROJECT NAME: Portland Harbor Inline

PROJECT NUMBER:

SAMPLED BY: MJH/RCB

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: 20 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: NWTPH-HCID	Follow-up NWTPH-Gx	Follow-up NWTPH-Dx	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 IL-52C-AAB520CB1-1005	10/25/05 10:17		X						
2 IL-52C-AAB520CB2-1005	10:38		X						
3 IL-52C-AAB524-1005	11:08		X						
4									
5									
6									
7									
8									
9									
10									

RELEASED BY: [signature] DATE: 10/25/05
PRINT NAME: Peter Abrams FIRM: TIME: 1510

RECEIVED BY: [signature] DATE: 10/26/05
PRINT NAME: Bob F FIRM: NCA TIME: 14:45

RELEASED BY: [signature] DATE: 10/26/05
PRINT NAME: Bob F FIRM: NCA TIME: 17:15

RECEIVED BY: [signature] DATE: 10/26/05
PRINT NAME: Chris Fahlgren FIRM: NCA TIME: 1715

ADDITIONAL REMARKS:

TEMP: 0.4

COC REV 09/04

PAGE 1 OF 1

NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: COP

1. **Please sign for receipt and opening of** 1 **cooler or** _____ **other** _____

   By (print) Callie Falstad (sign) [signature]

2. Date samples received 10/26/05 Date opened: Same Y or ___/___/___

3. Delivered by: Y (BOB) NCA courier ___ FedEx ___UPS ___Courier ___Client ___Other_____

   Airbill # if applicable _____ (Put copy of shipping papers in file)

4. There were 1 custody seals present, signed by BOB date 10/26/05

5. Were the custody seals unbroken and intact at the date and time of arrival? Y Yes ___No

6. Was ice used? Y yes ___no Type of ice: ___ blue ice ___gel ice Y real ice

   Temperature (degrees C) 0.4 Raytek thermometer _____ Digi-Therm (probe temperature blank)

   Glass 0.8C

7. Are custody papers sealed in a plastic bag and taped inside to lid? ___ Yes X No

8. Were custody papers filled out properly (ink, signed, etc.)? Y Yes ___ No

   If "no" please specify: _____

9. Was project identifiable from custody papers? X Yes ___ No

   Name of project _____ (if applicable)

10. **Initial and date for unpacking:** CF **(initials)** **date** 10/27/05

11. Packing material: NO bubble wrap/bag ___styrofoam ___cardboard _____other

12. Were samples in bags? ___ Yes X No

13. Did all containers indicated on the COC arrive? Y Yes ___ No

    If "no" please indicate which containers were absent _____

14. Were all containers unbroken and labels in good condition? Y Yes ___ No

    If "no" please indicate which containers _____

15. Were all bottle labels complete (ID, date, time, signature, etc.)? ___ Yes X No

    Do the IDs, times, etc. agree with the COC? (Y) Yes ~~X~~ No CF

    If "no" please indicate which containers No date/time on samples

16. Are containers properly preserved for indicated analysis? Y Yes ___ No

17. Is there adequate volume for the test(s) requested? Y Yes ___ No

18. If voa vials were submitted, are they free of bubbles? Y N/A ___ Yes ___ No

19. **Log-in phase: Date samples were logged in:** 10/27/05 **Elm Project # P** 5J1030

20. Logged in by (print) Callie Falstad (sign) [signature]

21. Was the project manager notified of status? (Use back of form as a record) ___ Yes Y No

ANALYTICAL REPORT

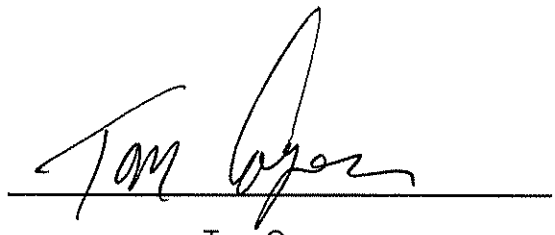
Job Number: 580-331-1

Job Description: Portland Harbor Inline Samp

For:

City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Attention: Peter Abrams



Tom Coyner
Project Manager I
tcoyner@stl-inc.com
11/30/2005

Case Narrative

Non Conformance Summary for job: 580-J331-1

Client: City of Portland BES
Date: 11/30/05

Pesticides and PCBs

Effected Final Samples

580-331-A-1-B
580-331-A-1-B
580-331-A-2-D
580-331-A-2-D
580-331-E-3-C
580-331-E-3-C
580-331-A-4-D
580-331-A-4-D
580-296-A-1-E
580-296-A-1-E

Endrin Failed low in the LCS/LCSD.

Effected Final Samples

580-331-A-1-B
580-331-A-1-B
580-331-A-2-D
580-331-A-2-D
580-331-E-3-C
580-331-E-3-C
580-331-A-4-D
580-331-A-4-D
580-296-A-1-E
580-296-A-1-E

Matrix problem (not incuding high analyte content)

CCV failed due to extreme matix of the samples.

METHOD SUMMARY

Client: City of Portland BES Job Number: 580-331-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)	STL-SEA	SW846 8270C	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Organochlorine Pesticides by Gas Chromatography	STL-SEA	SW846 8081A	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Polychlorinated Biphenyls (PCBs) by Gas Chromatography	STL-SEA	SW846 8082	
Ultrasonic Extraction (Low Level)	STL-SEA		SW846 3550B
Inductively Coupled Plasma - Atomic Emission Spectrometry	STL-SEA	SW846 6010B	
Acid Digestion of Sediments, Sludges, and Soils	STL-SEA		SW846 3050B
Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	STL-SEA	SW846 7471A	
Mercury in Solid or Semi-Solid Waste (Manual	STL-SEA		SW846 7471A
Percent Moisture	STL-SEA	EPA 160.3	

LAB REFERENCES:

STL-SEA = STL-Seattle

METHOD REFERENCES:

EPA - US Environmental Protection Agency

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: City of Portland BES

Job Number: 580-331-1

Method	Analyst	Analyst ID
SW846 8270C	Frans, Ben	BF
SW846 8081A	Loague, Steve	SL
SW846 8082	Marfiak, Steve T	STM
SW846 6010B	Palmquist, Stan	SP
SW846 7471A	Woo, Fred C	FCW
EPA 160.3	Boardway, Peter A	PAB

SAMPLE SUMMARY

Client: City of Portland BES

Job Number: 580-331-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-331-1	IL-52C-AAB520CB1-1005	Solid	10/25/2005 1017	10/26/2005 1000
580-331-2	IL-52C-AAB520CB2-1005	Solid	10/25/2005 1038	10/26/2005 1000
580-331-3	IL-52C-AAB524-1005	Solid	10/25/2005 1108	10/26/2005 1000
580-331-4	IL-52C-AAB529-1005	Solid	10/25/2005 1151	10/26/2005 1000

SAMPLE RESULTS

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB1-100 Lab Sample ID: 580-331-1

Date Sampled: 10/25/2005 1017
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8270C	**Date Prepared: 10/31/2005 1552**			**Date Analyzed: 11/08/2005 1547**	
Naphthalene	1300		ug/Kg	58	10
2-Methylnaphthalene	770	*	ug/Kg	58	10
1-Methylnaphthalene	410		ug/Kg	58	10
Acenaphthylene	110		ug/Kg	58	10
Acenaphthene	7000		ug/Kg	58	10
Fluorene	2300	*	ug/Kg	58	10
Phenanthrene	29000	*	ug/Kg	58	10
Anthracene	6100		ug/Kg	58	10
Benzo[a]anthracene	43000		ug/Kg	58	10
Chrysene	32000		ug/Kg	58	10
Benzofluoranthene	68000		ug/Kg	120	10
Benzo[a]pyrene	43000		ug/Kg	58	10
Indeno[1,2,3-cd]pyrene	27000		ug/Kg	58	10
Dibenz(a,h)anthracene	5600		ug/Kg	58	10
Benzo[g,h,i]perylene	31000	*	ug/Kg	58	10
Bis(2-ethylhexyl) phthalate	910		ug/Kg	230	10
Butyl benzyl phthalate	330		ug/Kg	120	10
Diethyl phthalate	ND		ug/Kg	120	10
Dimethyl phthalate	ND		ug/Kg	120	10
Di-n-butyl phthalate	1600		ug/Kg	230	10
Di-n-octyl phthalate	ND		ug/Kg	230	10

Surrogate			Acceptance Limits
2-Fluorobiphenyl	91	%	42 - 140
Nitrobenzene-d5	83	%	38 - 141
Terphenyl-d14	108	%	42 - 151

Method: 8270C	**Date Prepared: 10/31/2005 1552**			**Date Analyzed: 11/09/2005 1208**	
Fluoranthene	56000	*	ug/Kg	580	100
Pyrene	51000		ug/Kg	580	100

Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1550**	
Aldrin	ND		ug/Kg	1.2	1.0
alpha-BHC	ND		ug/Kg	1.2	1.0
beta-BHC	12		ug/Kg	1.2	1.0
delta-BHC	ND		ug/Kg	1.2	1.0
gamma-BHC (Lindane)	ND		ug/Kg	1.2	1.0
4,4'-DDD	ND		ug/Kg	2.3	1.0
4,4'-DDE	11		ug/Kg	2.3	1.0
4,4'-DDT	27		ug/Kg	2.3	1.0
Dieldrin	8.4		ug/Kg	2.3	1.0
Endosulfan I	ND		ug/Kg	1.2	1.0
Endosulfan II	ND		ug/Kg	2.3	1.0
Endosulfan sulfate	ND		ug/Kg	2.3	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB1-100 Lab Sample ID: 580-331-1

Date Sampled: 10/25/2005 1017
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier	Unit	RL	Dilution
Method: 8081A	**Date Prepared: 11/07/2005 1158**		**Date Analyzed: 11/17/2005 1550**	
Endrin	9.6 *	ug/Kg	2.3	1.0
Endrin aldehyde	56	ug/Kg	2.3	1.0
Heptachlor	ND	ug/Kg	1.2	1.0
Heptachlor epoxide	ND	ug/Kg	1.2	1.0
Methoxychlor	ND	ug/Kg	12	1.0
Endrin ketone	ND	ug/Kg	2.3	1.0
Toxaphene	ND	ug/Kg	120	1.0
alpha-Chlordane	3.9	ug/Kg	1.2	1.0
gamma-Chlordane	8.7	ug/Kg	1.2	1.0

Surrogate		Acceptance Limits
Tetrachloro-m-xylene	49 %	49 - 123
DCB Decachlorobiphenyl	66 %	40 - 158

Method: 8082	**Date Prepared: 11/04/2005 1314**		**Date Analyzed: 11/11/2005 0620**	
PCB-1016	ND	mg/Kg	0.058	1.0
PCB-1221	ND	mg/Kg	0.058	1.0
PCB-1232	ND	mg/Kg	0.058	1.0
PCB-1242	ND	mg/Kg	0.058	1.0
PCB-1248	ND	mg/Kg	0.058	1.0
PCB-1254	0.089	mg/Kg	0.058	1.0
PCB-1260	0.18 *	mg/Kg	0.058	1.0

Surrogate		Acceptance Limits
Tetrachloro-m-xylene	111 %	60 - 123
DCB Decachlorobiphenyl	140 * %	65 - 126

Method: 6010B	**Date Prepared: 11/04/2005 1428**		**Date Analyzed: 11/07/2005 0941**	
Arsenic	ND	mg/Kg	5.2	1.0
Cadmium	ND	mg/Kg	0.52	1.0
Chromium	200	mg/Kg	2.1	1.0
Copper	170	mg/Kg	2.1	1.0
Lead	110	mg/Kg	2.1	1.0
Nickel	140	mg/Kg	2.1	1.0
Selenium	ND	mg/Kg	10	1.0
Silver	ND	mg/Kg	1.0	1.0
Zinc	590	mg/Kg	1.6	1.0

Method: 7471A	**Date Prepared: 11/07/2005 1518**		**Date Analyzed: 11/08/2005 1123**	
Mercury	0.044 *	mg/Kg	0.021	1.0

Method: 160.3	**Date Prepared:**		**Date Analyzed: 11/04/2005 1555**	
Percent Solids	85	%	0.10	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB1-100 Lab Sample ID: 580-331-1

Date Sampled: 10/25/2005 1017
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier	Unit	RL	Dilution
Method: 160.3	**Date Prepared:**		**Date Analyzed: 11/04/2005 1555**	
Percent Moisture	15	%	0.10	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB2-100 Lab Sample ID: 580-331-2

Date Sampled: 10/25/2005 1038
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8270C	**Date Prepared: 10/31/2005 1552**			**Date Analyzed: 11/08/2005 1616**	
Naphthalene	440		ug/Kg	59	10
2-Methylnaphthalene	410	*	ug/Kg	59	10
1-Methylnaphthalene	250		ug/Kg	59	10
Acenaphthylene	64		ug/Kg	59	10
Acenaphthene	1600		ug/Kg	59	10
Fluorene	530	*	ug/Kg	59	10
Phenanthrene	6500	*	ug/Kg	59	10
Anthracene	1500		ug/Kg	59	10
Fluoranthene	17000	*	ug/Kg	59	10
Pyrene	16000		ug/Kg	59	10
Benzo[a]anthracene	13000		ug/Kg	59	10
Chrysene	9900		ug/Kg	59	10
Benzofluoranthene	23000		ug/Kg	120	10
Benzo[a]pyrene	15000		ug/Kg	59	10
Indeno[1,2,3-cd]pyrene	10000		ug/Kg	59	10
Dibenz(a,h)anthracene	2200		ug/Kg	59	10
Benzo[g,h,i]perylene	12000	*	ug/Kg	59	10
Bis(2-ethylhexyl) phthalate	1600		ug/Kg	240	10
Butyl benzyl phthalate	750		ug/Kg	120	10
Diethyl phthalate	ND		ug/Kg	120	10
Dimethyl phthalate	560		ug/Kg	120	10
Di-n-butyl phthalate	280		ug/Kg	240	10
Di-n-octyl phthalate	ND		ug/Kg	240	10

Surrogate			Acceptance Limits
2-Fluorobiphenyl	86	%	42 - 140
Nitrobenzene-d5	84	%	38 - 141
Terphenyl-d14	100	%	42 - 151

Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1611**	
Aldrin	ND		ug/Kg	1.2	1.0
alpha-BHC	ND		ug/Kg	1.2	1.0
beta-BHC	ND		ug/Kg	1.2	1.0
delta-BHC	ND		ug/Kg	1.2	1.0
gamma-BHC (Lindane)	ND		ug/Kg	1.2	1.0
4,4'-DDD	ND		ug/Kg	2.4	1.0
4,4'-DDE	2.4		ug/Kg	2.4	1.0
4,4'-DDT	ND		ug/Kg	2.4	1.0
Dieldrin	ND		ug/Kg	2.4	1.0
Endosulfan I	ND		ug/Kg	1.2	1.0
Endosulfan II	ND		ug/Kg	2.4	1.0
Endosulfan sulfate	ND		ug/Kg	2.4	1.0
Endrin	8.3	*	ug/Kg	2.4	1.0
Endrin aldehyde	17		ug/Kg	2.4	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB2-100 Lab Sample ID: 580-331-2

Date Sampled: 10/25/2005 1038
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1611**	
Heptachlor	ND		ug/Kg	1.2	1.0
Heptachlor epoxide	ND		ug/Kg	1.2	1.0
Methoxychlor	ND		ug/Kg	12	1.0
Endrin ketone	ND		ug/Kg	2.4	1.0
Toxaphene	ND		ug/Kg	120	1.0
alpha-Chlordane	ND		ug/Kg	1.2	1.0
gamma-Chlordane	ND		ug/Kg	1.2	1.0
Surrogate				Acceptance Limits	
Tetrachloro-m-xylene	58		%	49 - 123	
DCB Decachlorobiphenyl	45		%	40 - 158	
Method: 8082	**Date Prepared: 11/04/2005 1314**			**Date Analyzed: 11/11/2005 0644**	
PCB-1016	ND		mg/Kg	0.057	1.0
PCB-1221	ND		mg/Kg	0.057	1.0
PCB-1232	ND		mg/Kg	0.057	1.0
PCB-1242	ND	*	mg/Kg	0.057	1.0
PCB-1248	ND		mg/Kg	0.057	1.0
PCB-1254	0.16		mg/Kg	0.057	1.0
PCB-1260	0.23	*	mg/Kg	0.057	1.0
Surrogate				Acceptance Limits	
Tetrachloro-m-xylene	113		%	60 - 123	
DCB Decachlorobiphenyl	147	*	%	65 - 126	
Surrogate				Acceptance Limits	
Tetrachloro-m-xylene	107		%	60 - 123	
DCB Decachlorobiphenyl	122		%	65 - 126	
Method: 6010B	**Date Prepared: 11/04/2005 1428**			**Date Analyzed: 11/07/2005 0945**	
Arsenic	ND		mg/Kg	4.9	1.0
Cadmium	ND		mg/Kg	0.49	1.0
Chromium	420		mg/Kg	1.9	1.0
Copper	370		mg/Kg	1.9	1.0
Lead	280		mg/Kg	1.9	1.0
Nickel	300		mg/Kg	1.9	1.0
Selenium	ND		mg/Kg	9.7	1.0
Silver	ND		mg/Kg	0.97	1.0
Zinc	650		mg/Kg	1.5	1.0
Method: 7471A	**Date Prepared: 11/07/2005 1518**			**Date Analyzed: 11/08/2005 1128**	
Mercury	0.18	*	mg/Kg	0.020	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB520CB2-100 Lab Sample ID: 580-331-2

Date Sampled: 10/25/2005 1038
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier	Unit	RL	Dilution
Method: 160.3	**Date Prepared:**		**Date Analyzed: 11/04/2005 1555**	
Percent Solids	83	%	0.10	1.0
Percent Moisture	17	%	0.10	1.0

Peter Abrams
City of Portland BES
6543 N. Burlington Ave
Portland, OR 97203

Job Number: 580-331-1

Client Sample ID: IL-52C-AAB524-1005 **Lab Sample ID: 580-331-3**

Date Sampled: 10/25/2005 1108
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8270C	**Date Prepared: 10/31/2005 1552**			**Date Analyzed: 11/08/2005 1645**	
Naphthalene	93		ug/Kg	61	10
2-Methylnaphthalene	120	*	ug/Kg	61	10
1-Methylnaphthalene	91		ug/Kg	61	10
Acenaphthylene	ND		ug/Kg	61	10
Acenaphthene	64		ug/Kg	61	10
Fluorene	ND		ug/Kg	61	10
Phenanthrene	330	*	ug/Kg	61	10
Anthracene	140		ug/Kg	61	10
Fluoranthene	710	*	ug/Kg	61	10
Pyrene	750		ug/Kg	61	10
Benzo[a]anthracene	470		ug/Kg	61	10
Chrysene	640		ug/Kg	61	10
Benzofluoranthene	1700		ug/Kg	120	10
Benzo[a]pyrene	670		ug/Kg	61	10
Indeno[1,2,3-cd]pyrene	590		ug/Kg	61	10
Dibenz(a,h)anthracene	160		ug/Kg	61	10
Benzo[g,h,i]perylene	660	*	ug/Kg	61	10
Bis(2-ethylhexyl) phthalate	1500		ug/Kg	250	10
Butyl benzyl phthalate	140		ug/Kg	120	10
Diethyl phthalate	ND		ug/Kg	120	10
Dimethyl phthalate	ND		ug/Kg	120	10
Di-n-butyl phthalate	ND		ug/Kg	250	10
Di-n-octyl phthalate	ND		ug/Kg	250	10

Surrogate			Acceptance Limits
2-Fluorobiphenyl	82	%	42 - 140
Nitrobenzene-d5	76	%	38 - 141
Terphenyl-d14	92	%	42 - 151

Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1632**	
Aldrin	ND		ug/Kg	1.2	1.0
alpha-BHC	ND		ug/Kg	1.2	1.0
beta-BHC	ND		ug/Kg	1.2	1.0
delta-BHC	ND		ug/Kg	1.2	1.0
gamma-BHC (Lindane)	ND		ug/Kg	1.2	1.0
4,4'-DDD	ND		ug/Kg	2.4	1.0
4,4'-DDE	ND		ug/Kg	2.4	1.0
4,4'-DDT	8.8		ug/Kg	2.4	1.0
Dieldrin	ND		ug/Kg	2.4	1.0
Endosulfan I	ND		ug/Kg	1.2	1.0
Endosulfan II	ND		ug/Kg	2.4	1.0
Endosulfan sulfate	ND		ug/Kg	2.4	1.0
Endrin	9.0	*	ug/Kg	2.4	1.0
Endrin aldehyde	41		ug/Kg	2.4	1.0

Peter Abrams
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Job Number: 580-331-1

Client Sample ID: IL-52C-AAB524-1005 **Lab Sample ID: 580-331-3**

Date Sampled: 10/25/2005 1108
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1632**	
Heptachlor	ND		ug/Kg	1.2	1.0
Heptachlor epoxide	ND		ug/Kg	1.2	1.0
Methoxychlor	ND		ug/Kg	12	1.0
Endrin ketone	ND		ug/Kg	2.4	1.0
Toxaphene	ND		ug/Kg	120	1.0
alpha-Chlordane	ND		ug/Kg	1.2	1.0
gamma-Chlordane	ND		ug/Kg	1.2	1.0
Surrogate				Acceptance Limits	
Tetrachloro-m-xylene	53		%	49 - 123	
DCB Decachlorobiphenyl	51		%	40 - 158	
Method: 8082	**Date Prepared: 11/04/2005 1314**			**Date Analyzed: 11/11/2005 0755**	
PCB-1016	ND		mg/Kg	0.060	1.0
PCB-1221	ND		mg/Kg	0.060	1.0
PCB-1232	ND		mg/Kg	0.060	1.0
PCB-1242	ND	*	mg/Kg	0.060	1.0
PCB-1248	ND		mg/Kg	0.060	1.0
PCB-1254	ND		mg/Kg	0.060	1.0
PCB-1260	ND	*	mg/Kg	0.060	1.0
Surrogate				Acceptance Limits	
Tetrachloro-m-xylene	120		%	60 - 123	
DCB Decachlorobiphenyl	108		%	65 - 126	
Method: 6010B	**Date Prepared: 11/04/2005 1428**			**Date Analyzed: 11/07/2005 0948**	
Arsenic	ND		mg/Kg	4.4	1.0
Cadmium	ND		mg/Kg	0.44	1.0
Chromium	81		mg/Kg	1.8	1.0
Copper	42		mg/Kg	1.8	1.0
Lead	150		mg/Kg	1.8	1.0
Nickel	20		mg/Kg	1.8	1.0
Selenium	ND		mg/Kg	8.8	1.0
Silver	ND		mg/Kg	0.88	1.0
Zinc	230		mg/Kg	1.3	1.0
Method: 7471A	**Date Prepared: 11/07/2005 1518**			**Date Analyzed: 11/08/2005 1203**	
Mercury	ND		mg/Kg	0.023	1.0
Method: 160.3	**Date Prepared:**			**Date Analyzed: 11/04/2005 1555**	
Percent Solids	80		%	0.10	1.0
Percent Moisture	20		%	0.10	1.0

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Job Number: 580-331-1

Client Sample ID: IL-52C-AAB529-1005 **Lab Sample ID: 580-331-4**

Date Sampled: 10/25/2005 1151
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: 8270C	**Date Prepared: 10/31/2005 1552**			**Date Analyzed: 11/08/2005 1715**	
Naphthalene	160		ug/Kg	79	10
2-Methylnaphthalene	160	*	ug/Kg	79	10
1-Methylnaphthalene	110		ug/Kg	79	10
Acenaphthylene	ND		ug/Kg	79	10
Acenaphthene	150		ug/Kg	79	10
Fluorene	89	*	ug/Kg	79	10
Phenanthrene	960	*	ug/Kg	79	10
Anthracene	210		ug/Kg	79	10
Fluoranthene	2200	*	ug/Kg	79	10
Pyrene	2000		ug/Kg	79	10
Benzo[a]anthracene	1400		ug/Kg	79	10
Chrysene	1500		ug/Kg	79	10
Benzofluoranthene	3800		ug/Kg	160	10
Benzo[a]pyrene	1800		ug/Kg	79	10
Indeno[1,2,3-cd]pyrene	1200		ug/Kg	79	10
Dibenz(a,h)anthracene	410		ug/Kg	79	10
Benzo[g,h,i]perylene	1500	*	ug/Kg	79	10
Bis(2-ethylhexyl) phthalate	4200		ug/Kg	320	10
Butyl benzyl phthalate	220		ug/Kg	160	10
Diethyl phthalate	ND		ug/Kg	160	10
Dimethyl phthalate	ND		ug/Kg	160	10
Di-n-butyl phthalate	ND		ug/Kg	320	10
Di-n-octyl phthalate	ND		ug/Kg	320	10

Surrogate			Acceptance Limits
2-Fluorobiphenyl	83	%	42 - 140
Nitrobenzene-d5	80	%	38 - 141
Terphenyl-d14	97	%	42 - 151

Method: 8081A	**Date Prepared: 11/07/2005 1158**			**Date Analyzed: 11/17/2005 1653**	
Aldrin	ND		ug/Kg	1.5	1.0
alpha-BHC	ND		ug/Kg	1.5	1.0
beta-BHC	6.2		ug/Kg	1.5	1.0
delta-BHC	ND		ug/Kg	1.5	1.0
gamma-BHC (Lindane)	ND		ug/Kg	1.5	1.0
4,4'-DDD	ND		ug/Kg	3.0	1.0
4,4'-DDE	9.9		ug/Kg	3.0	1.0
4,4'-DDT	7.2		ug/Kg	3.0	1.0
Dieldrin	ND		ug/Kg	3.0	1.0
Endosulfan I	ND		ug/Kg	1.5	1.0
Endosulfan II	ND		ug/Kg	3.0	1.0
Endosulfan sulfate	ND		ug/Kg	3.0	1.0
Endrin	12	*	ug/Kg	3.0	1.0
Endrin aldehyde	27		ug/Kg	3.0	1.0

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Job Number: 580-331-1

Client Sample ID: IL-52C-AAB529-1005 **Lab Sample ID: 580-331-4**

Date Sampled: 10/25/2005 1151
Date Received: 10/26/2005 1000

Analyte	Result/Qualifier	Unit	RL	Dilution
Method: 8081A	**Date Prepared: 11/07/2005 1158**		**Date Analyzed: 11/17/2005 1653**	
Heptachlor	ND	ug/Kg	1.5	1.0
Heptachlor epoxide	ND	ug/Kg	1.5	1.0
Methoxychlor	ND	ug/Kg	15	1.0
Endrin ketone	ND	ug/Kg	3.0	1.0
Toxaphene	ND	ug/Kg	150	1.0
alpha-Chlordane	ND	ug/Kg	1.5	1.0
gamma-Chlordane	9.4	ug/Kg	1.5	1.0
Surrogate			Acceptance Limits	
Tetrachloro-m-xylene	64	%	49 - 123	
DCB Decachlorobiphenyl	52	%	40 - 158	
Method: 8082	**Date Prepared: 11/04/2005 1314**		**Date Analyzed: 11/11/2005 0818**	
PCB-1016	ND	mg/Kg	0.077	1.0
PCB-1221	ND	mg/Kg	0.077	1.0
PCB-1232	ND	mg/Kg	0.077	1.0
PCB-1242	ND	mg/Kg	0.077	1.0
PCB-1248	ND	mg/Kg	0.077	1.0
PCB-1254	ND	mg/Kg	0.077	1.0
PCB-1260	ND	mg/Kg	0.077	1.0
Surrogate			Acceptance Limits	
Tetrachloro-m-xylene	106	%	60 - 123	
DCB Decachlorobiphenyl	110	%	65 - 126	
Method: 6010B	**Date Prepared: 11/04/2005 1428**		**Date Analyzed: 11/07/2005 0952**	
Arsenic	ND	mg/Kg	7.6	1.0
Cadmium	ND	mg/Kg	0.76	1.0
Chromium	350	mg/Kg	3.1	1.0
Copper	110	mg/Kg	3.1	1.0
Lead	200	mg/Kg	3.1	1.0
Nickel	150	mg/Kg	3.1	1.0
Selenium	ND	mg/Kg	15	1.0
Silver	ND	mg/Kg	1.5	1.0
Zinc	960	mg/Kg	2.3	1.0
Method: 7471A	**Date Prepared: 11/07/2005 1518**		**Date Analyzed: 11/08/2005 1208**	
Mercury	0.24 *	mg/Kg	0.028	1.0
Method: 160.3	**Date Prepared:**		**Date Analyzed: 11/04/2005 1555**	
Percent Solids	63	%	0.10	1.0
Percent Moisture	37	%	0.10	1.0

DATA REPORTING QUALIFIERS

Client: City of Portland BES

Job Number: 580-331-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits
GC Semi VOA		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits
Metals		
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

QUALITY CONTROL RESULTS

Client: City of Portland BES

Job Number: 580-331-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS Semi VOA				
Prep Batch: 580-932				
LCS 580-932/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-932/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-932/1-A	Method Blank	Solid	3550B	
580-331-1	IL-52C-AAB520CB1-1005	Solid	3550B	
580-331-2	IL-52C-AAB520CB2-1005	Solid	3550B	
580-331-3	IL-52C-AAB524-1005	Solid	3550B	
580-331-4	IL-52C-AAB529-1005	Solid	3550B	
Analysis Batch:580-1224				
LCS 580-932/2-A	Lab Control Spike	Solid	8270C	580-932
LCSD 580-932/3-A	Lab Control Spike Duplicate	Solid	8270C	580-932
MB 580-932/1-A	Method Blank	Solid	8270C	580-932
580-331-1	IL-52C-AAB520CB1-1005	Solid	8270C	580-932
580-331-2	IL-52C-AAB520CB2-1005	Solid	8270C	580-932
580-331-3	IL-52C-AAB524-1005	Solid	8270C	580-932
580-331-4	IL-52C-AAB529-1005	Solid	8270C	580-932

Client: City of Portland BES

Job Number: 580-331-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC Semi VOA				
Prep Batch: 580-1106				
LCS 580-1106/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-1106/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-1106/1-A	Method Blank	Solid	3550B	
580-331-1	IL-52C-AAB520CB1-1005	Solid	3550B	
580-331-2	IL-52C-AAB520CB2-1005	Solid	3550B	
580-331-2MS	Matrix Spike	Solid	3550B	
580-331-2MSD	Matrix Spike Duplicate	Solid	3550B	
580-331-3	IL-52C-AAB524-1005	Solid	3550B	
580-331-4	IL-52C-AAB529-1005	Solid	3550B	
Prep Batch: 580-1147				
LCS 580-1147/2-A	Lab Control Spike	Solid	3550B	
LCSD 580-1147/3-A	Lab Control Spike Duplicate	Solid	3550B	
MB 580-1147/1-A	Method Blank	Solid	3550B	
580-331-1	IL-52C-AAB520CB1-1005	Solid	3550B	
580-331-2	IL-52C-AAB520CB2-1005	Solid	3550B	
580-331-3	IL-52C-AAB524-1005	Solid	3550B	
580-331-4	IL-52C-AAB529-1005	Solid	3550B	
Analysis Batch:580-1519				
LCS 580-1106/2-A	Lab Control Spike	Solid	8082	580-1106
LCSD 580-1106/3-A	Lab Control Spike Duplicate	Solid	8082	580-1106
MB 580-1106/1-A	Method Blank	Solid	8082	580-1106
580-331-1	IL-52C-AAB520CB1-1005	Solid	8082	580-1106
580-331-2	IL-52C-AAB520CB2-1005	Solid	8082	580-1106
580-331-2MS	Matrix Spike	Solid	8082	580-1106
580-331-2MSD	Matrix Spike Duplicate	Solid	8082	580-1106
580-331-3	IL-52C-AAB524-1005	Solid	8082	580-1106
580-331-4	IL-52C-AAB529-1005	Solid	8082	580-1106
Analysis Batch:580-1808				
LCS 580-1147/2-A	Lab Control Spike	Solid	8081A	580-1147
LCSD 580-1147/3-A	Lab Control Spike Duplicate	Solid	8081A	580-1147
MB 580-1147/1-A	Method Blank	Solid	8081A	580-1147
580-331-1	IL-52C-AAB520CB1-1005	Solid	8081A	580-1147
580-331-2	IL-52C-AAB520CB2-1005	Solid	8081A	580-1147
580-331-3	IL-52C-AAB524-1005	Solid	8081A	580-1147
580-331-4	IL-52C-AAB529-1005	Solid	8081A	580-1147

Client: City of Portland BES

Job Number: 580-331-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
Metals				
Prep Batch: 580-1111				
LCS 580-1111/2-A	Lab Control Spike	Solid	3050B	
LCSD 580-1111/3-A	Lab Control Spike Duplicate	Solid	3050B	
MB 580-1111/1-A	Method Blank	Solid	3050B	
580-331-1	IL-52C-AAB520CB1-1005	Solid	3050B	
580-331-2	IL-52C-AAB520CB2-1005	Solid	3050B	
580-331-3	IL-52C-AAB524-1005	Solid	3050B	
580-331-4	IL-52C-AAB529-1005	Solid	3050B	
Prep Batch: 580-1171				
LCS 580-1171/2-A	Lab Control Spike	Solid	7471A	
LCSD 580-1171/3-A	Lab Control Spike Duplicate	Solid	7471A	
MB 580-1171/1-A	Method Blank	Solid	7471A	
580-331-1	IL-52C-AAB520CB1-1005	Solid	7471A	
580-331-2	IL-52C-AAB520CB2-1005	Solid	7471A	
580-331-3	IL-52C-AAB524-1005	Solid	7471A	
580-331-4	IL-52C-AAB529-1005	Solid	7471A	
Analysis Batch:580-1158				
LCS 580-1111/2-A	Lab Control Spike	Solid	6010B	580-1111
LCSD 580-1111/3-A	Lab Control Spike Duplicate	Solid	6010B	580-1111
MB 580-1111/1-A	Method Blank	Solid	6010B	580-1111
580-331-1	IL-52C-AAB520CB1-1005	Solid	6010B	580-1111
580-331-2	IL-52C-AAB520CB2-1005	Solid	6010B	580-1111
580-331-3	IL-52C-AAB524-1005	Solid	6010B	580-1111
580-331-4	IL-52C-AAB529-1005	Solid	6010B	580-1111
Analysis Batch:580-1270				
LCS 580-1171/2-A	Lab Control Spike	Solid	7471A	580-1171
LCSD 580-1171/3-A	Lab Control Spike Duplicate	Solid	7471A	580-1171
MB 580-1171/1-A	Method Blank	Solid	7471A	580-1171
580-331-1	IL-52C-AAB520CB1-1005	Solid	7471A	580-1171
580-331-2	IL-52C-AAB520CB2-1005	Solid	7471A	580-1171
580-331-3	IL-52C-AAB524-1005	Solid	7471A	580-1171
580-331-4	IL-52C-AAB529-1005	Solid	7471A	580-1171
General Chemistry				
Analysis Batch:580-1117				
580-331-1	IL-52C-AAB520CB1-1005	Solid	160.3	
580-331-2	IL-52C-AAB520CB2-1005	Solid	160.3	
580-331-3	IL-52C-AAB524-1005	Solid	160.3	
580-331-4	IL-52C-AAB529-1005	Solid	160.3	

Client: City of Portland BES

Job Number: 580-331-1

Surrogate Recovery Report

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Client Matrix: Solid

Lab Sample ID	Client Sample	(FBP) (%Rec)	(NBZ) (%Rec)	(TPH) (%Rec)
580-331-1	IL-52C-AAB520CB1-1005	91	83	108
580-331-2	IL-52C-AAB520CB2-1005	86	84	100
580-331-3	IL-52C-AAB524-1005	82	76	92
580-331-4	IL-52C-AAB529-1005	83	80	97
LCS 580-932/2-A	LCS	94	91	107
LCSD 580-932/3-A	LCSD	90	84	100
MB 580-932/1-A	MB	97	92	106

Surrogate		Acceptance Limits
(FBP)	2-Fluorobiphenyl	42 - 140
(NBZ)	Nitrobenzene-d5	38 - 141
(TPH)	Terphenyl-d14	42 - 151

Client: City of Portland BES

Job Number: 580-331-1

Surrogate Recovery Report

8081A Organochlorine Pesticides by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)	(TCX 1) (%Rec)
580-331-1	IL-52C-AAB520CB1-1005	66	49
580-331-2	IL-52C-AAB520CB2-1005	45	58
580-331-3	IL-52C-AAB524-1005	51	53
580-331-4	IL-52C-AAB529-1005	52	64
LCS 580-1147/2-A	LCS	81	78
LCSD 580-1147/3-A	LCSD	78	76
MB 580-1147/1-A	MB	95	93

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	40 - 158
(TCX 1)	Tetrachloro-m-xylene	49 - 123

Client: City of Portland BES

Job Number: 580-331-1

Surrogate Recovery Report

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Matrix: Solid

Lab Sample ID	Client Sample	(DCB 1) (%Rec)		(DCB 2) (%Rec)	(TCX 1) (%Rec)	(TCX 2) (%Rec)
580-331-1	IL-52C-AAB520CB1-1005	140	*		111	
580-331-2	IL-52C-AAB520CB2-1005	147	*	122	113	107
580-331-3	IL-52C-AAB524-1005	108			120	
580-331-4	IL-52C-AAB529-1005	110			106	
580-331-2MS	IL-52C-AAB520CB2-1005	168	*		114	
580-331-2MSD	IL-52C-AAB520CB2-1005	161	*		93	
LCS 580-1106/2-A	LCS	113			112	
LCSD 580-1106/3-A	LCSD	125			116	
MB 580-1106/1-A	MB	106			104	

Surrogate		Acceptance Limits
(DCB 1)	DCB Decachlorobiphenyl	65 - 126
(TCX 1)	Tetrachloro-m-xylene	60 - 123

Client: City of Portland BES

Job Number: 580-331-1

Method Blank - Batch: 580-932

Method: 8270C
Preparation: 3550B

Lab Sample ID: MB 580-932/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1250
Date Prepared: 10/31/2005 1552

Analysis Batch: 580-1224
Prep Batch: 580-932
Units: ug/Kg

Instrument ID: 5973N
Lab File ID: HP001273.D
Initial Weight/Volume: 20 g
Final Weight/Volume: 20 mL
Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		5.0
2-Methylnaphthalene	ND		5.0
1-Methylnaphthalene	ND		5.0
Acenaphthylene	ND		5.0
Acenaphthene	ND		5.0
Fluorene	ND		5.0
Phenanthrene	ND		5.0
Anthracene	ND		5.0
Fluoranthene	ND		5.0
Pyrene	ND		5.0
Benzo[a]anthracene	ND		5.0
Chrysene	ND		5.0
Benzofluoranthene	ND		10
Benzo[a]pyrene	ND		5.0
Indeno[1,2,3-cd]pyrene	ND		5.0
Dibenz(a,h)anthracene	ND		5.0
Benzo[g,h,i]perylene	ND		5.0
Bis(2-ethylhexyl) phthalate	24		20
Butyl benzyl phthalate	ND		10
Diethyl phthalate	ND		10
Dimethyl phthalate	ND		10
Di-n-butyl phthalate	ND		20
Di-n-octyl phthalate	ND		20

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	97	42 - 140
Nitrobenzene-d5	92	38 - 141
Terphenyl-d14	106	42 - 151

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-932

Method: 8270C
Preparation: 3550B

LCS Lab Sample ID: LCS 580-932/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1319
Date Prepared: 10/31/2005 1552

Analysis Batch: 580-1224
Prep Batch: 580-932
Units: ug/Kg

Instrument ID: 5973N
Lab File ID: HP001274.D
Initial Weight/Volume: 20 g
Final Weight/Volume: 20 mL
Injection Volume:

LCSD Lab Sample ID: LCSD 580-932/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1349
Date Prepared: 10/31/2005 1552

Analysis Batch: 580-1224
Prep Batch: 580-932
Units: ug/Kg

Instrument ID: 5973N
Lab File ID: HP001275.D
Initial Weight/Volume: 20 g
Final Weight/Volume: 20 mL
Injection Volume:

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Naphthalene	128	118	54 - 131	8	26		
2-Methylnaphthalene	141	129	51 - 138	8	27	*	
1-Methylnaphthalene	147	132	50 - 150	10	30		
Acenaphthylene	120	116	52 - 130	3	28		
Acenaphthene	133	128	50 - 144	4	27		
Fluorene	137	129	50 - 134	6	31	*	
Phenanthrene	138	128	55 - 133	7	28	*	
Anthracene	119	110	52 - 135	8	27		
Fluoranthene	145	136	54 - 135	6	36	*	*
Pyrene	144	136	47 - 152	6	31		
Benzo[a]anthracene	135	120	55 - 135	12	27		
Chrysene	119	115	59 - 133	4	26		
Benzofluoranthene	127	117	43 - 154	9	31		
Benzo[a]pyrene	130	120	54 - 138	8	30		
Indeno[1,2,3-cd]pyrene	137	129	45 - 153	6	29		
Dibenz(a,h)anthracene	132	126	50 - 150	5	30		
Benzo[g,h,i]perylene	149	142	54 - 142	5	28	*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Method Blank - Batch: 580-1147

Method: 8081A
Preparation: 3550B

Lab Sample ID: MB 580-1147/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/17/2005 1447
Date Prepared: 11/07/2005 1158

Analysis Batch: 580-1808
Prep Batch: 580-1147
Units: ug/Kg

Instrument ID: 6890N
Lab File ID: ECD14755.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	RL
Aldrin	ND		1.0
alpha-BHC	ND		1.0
beta-BHC	ND		1.0
delta-BHC	ND		1.0
gamma-BHC (Lindane)	ND		1.0
4,4'-DDD	ND		2.0
4,4'-DDE	ND		2.0
4,4'-DDT	ND		2.0
Dieldrin	ND		2.0
Endosulfan I	ND		1.0
Endosulfan II	ND		2.0
Endosulfan sulfate	ND		2.0
Endrin	ND		2.0
Endrin aldehyde	ND		2.0
Heptachlor	ND		1.0
Heptachlor epoxide	ND		1.0
Methoxychlor	ND		10
Endrin ketone	ND		2.0
Toxaphene	ND		100
alpha-Chlordane	ND		1.0
gamma-Chlordane	ND		1.0

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	93	49 - 123
DCB Decachlorobiphenyl	95	40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-1147

Method: 8081A
Preparation: 3550B

LCS Lab Sample ID: LCS 580-1147/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/17/2005 1508
Date Prepared: 11/07/2005 1158

Analysis Batch: 580-1808
Prep Batch: 580-1147
Units: ug/Kg

Instrument ID: 6890N
Lab File ID: ECD14756.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-1147/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/17/2005 1529
Date Prepared: 11/07/2005 1158

Analysis Batch: 580-1808
Prep Batch: 580-1147
Units: ug/Kg

Instrument ID: 6890N
Lab File ID: ECD14757.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Aldrin	78	73	53 - 126	7	24		
alpha-BHC	72	68	41 - 128	6	28		
beta-BHC	74	69	48 - 121	7	32		
delta-BHC	75	69	22 - 153	8	36		
gamma-BHC (Lindane)	74	69	50 - 127	7	29		
4,4'-DDD	76	69	44 - 141	9	41		
4,4'-DDE	76	69	47 - 140	9	40		
4,4'-DDT	48	42	34 - 159	14	47		
Dieldrin	75	68	53 - 134	9	32		
Endosulfan I	69	64	52 - 122	7	31		
Endosulfan II	82	75	53 - 132	9	36		
Endosulfan sulfate	71	64	42 - 128	11	43		
Endrin	46	41	46 - 138	12	36		*
Endrin aldehyde	92	84	12 - 179	9	47		
Heptachlor	69	64	50 - 130	8	31		
Heptachlor epoxide	70	65	49 - 123	8	31		
Methoxychlor	57	49	46 - 154	14	46		
Endrin ketone	75	68	45 - 127	9	45		
alpha-Chlordane	66	61	46 - 118	8	33		
gamma-Chlordane	64	59	49 - 122	8	32		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Tetrachloro-m-xylene	78	76	49 - 123
DCB Decachlorobiphenyl	81	78	40 - 158

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Method Blank - Batch: 580-1106

Method: 8082
Preparation: 3550B

Lab Sample ID: MB 580-1106/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/11/2005 0509
Date Prepared: 11/04/2005 1314

Analysis Batch: 580-1519
Prep Batch: 580-1106
Units: mg/Kg

Instrument ID: 6890N
Lab File ID: PCB9084.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Result	Qual	RL
PCB-1016	ND		0.050
PCB-1221	ND		0.050
PCB-1232	ND		0.050
PCB-1242	ND		0.050
PCB-1248	ND		0.050
PCB-1254	ND		0.050
PCB-1260	ND		0.050

Surrogate	% Rec	Acceptance Limits
Tetrachloro-m-xylene	104	60 - 123
DCB Decachlorobiphenyl	106	65 - 126

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-1106

Method: 8082
Preparation: 3550B

LCS Lab Sample ID: LCS 580-1106/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/11/2005 0533
Date Prepared: 11/04/2005 1314

Analysis Batch: 580-1519
Prep Batch: 580-1106
Units: mg/Kg

Instrument ID: 6890N
Lab File ID: PCB9085.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 580-1106/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/11/2005 0556
Date Prepared: 11/04/2005 1314

Analysis Batch: 580-1519
Prep Batch: 580-1106
Units: mg/Kg

Instrument ID: 6890N
Lab File ID: PCB9086.D
Initial Weight/Volume: 10 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
PCB-1242	99	113	57 - 128	13	8		*
PCB-1260	105	120	65 - 132	13	8		*

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-1106

Method: 8082
Preparation: 3550B

MS Lab Sample ID:	580-331-2	Analysis Batch: 580-1519	Instrument ID: 6890N
Client Matrix:	Solid	Prep Batch: 580-1106	Lab File ID: PCB9089.D
Dilution:	1.0		Initial Weight/Volume: 10.2631 g
Date Analyzed:	11/11/2005 0707		Final Weight/Volume: 10 mL
Date Prepared:	11/04/2005 1314		Injection Volume:
			Column ID: PRIMARY
MSD Lab Sample ID:	580-331-2	Analysis Batch: 580-1519	Instrument ID: 6890N
Client Matrix:	Solid	Prep Batch: 580-1106	Lab File ID: PCB9090.D
Dilution:	1.0		Initial Weight/Volume: 10.4109 g
Date Analyzed:	11/11/2005 0731		Final Weight/Volume: 10 mL
Date Prepared:	11/04/2005 1314		Injection Volume:
			Column ID: PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
PCB-1242	123	371	57 - 128	99	8		*
PCB-1260	114	295	65 - 132	44	8		*

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Method Blank - Batch: 580-1111

Method: 6010B
Preparation: 3050B

Lab Sample ID: MB 580-1111/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/07/2005 0852
Date Prepared: 11/04/2005 1428

Analysis Batch: 580-1158
Prep Batch: 580-1111
Units: mg/Kg

Instrument ID: PE Optima 3200 DV
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic	ND		5.0
Cadmium	ND		0.50
Chromium	ND		2.0
Copper	ND		2.0
Lead	ND		2.0
Nickel	ND		2.0
Selenium	ND		10
Silver	ND		1.0
Zinc	ND		1.5

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-1111

Method: 6010B
Preparation: 3050B

LCS Lab Sample ID: LCS 580-1111/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/07/2005 0959
Date Prepared: 11/04/2005 1428

Analysis Batch: 580-1158
Prep Batch: 580-1111
Units: mg/Kg

Instrument ID: PE Optima 3200 DV
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-1111/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/07/2005 1003
Date Prepared: 11/04/2005 1428

Analysis Batch: 580-1158
Prep Batch: 580-1111
Units: mg/Kg

Instrument ID: PE Optima 3200 DV
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Arsenic	103	100	80 - 120	3	35		
Cadmium	98	95	80 - 120	3	35		
Chromium	106	103	80 - 120	3	35		
Copper	102	99	80 - 120	3	35		
Lead	102	99	80 - 120	3	35		
Nickel	107	104	80 - 120	3	35		
Selenium	97	94	80 - 120	3	35		
Silver	99	96	80 - 120	3	35		
Zinc	115	107	80 - 120	7	35		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: City of Portland BES

Job Number: 580-331-1

Method Blank - Batch: 580-1171

Method: 7471A
Preparation: 7471A

Lab Sample ID: MB 580-1171/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1010
Date Prepared: 11/07/2005 1518

Analysis Batch: 580-1270
Prep Batch: 580-1171
Units: mg/Kg

Instrument ID: Leeman Hydra AA
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Mercury	ND		0.020

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 580-1171

Method: 7471A
Preparation: 7471A

LCS Lab Sample ID: LCS 580-1171/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1015
Date Prepared: 11/07/2005 1518

Analysis Batch: 580-1270
Prep Batch: 580-1171
Units: mg/Kg

Instrument ID: Leeman Hydra AA
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-1171/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 11/08/2005 1021
Date Prepared: 11/07/2005 1518

Analysis Batch: 580-1270
Prep Batch: 580-1171
Units: mg/Kg

Instrument ID: Leeman Hydra AA
Lab File ID: N/A
Initial Weight/Volume: 0.5 g
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	98	98	75 - 125	0	25		

Calculations are performed before rounding to avoid round-off errors in calculated results.

LOGIN SAMPLE RECEIPT CHECK LIST

Client: City of Portland BES

Job Number: 580-331-1

Login Number: 331

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present	True	
Samples do not require splitting or compositing	True	

B.8 C

Chain of Custody Record

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT STL

Client: City of Portland, BES	Project Manager: Peter Abrams	Date: 10/25/05	Chain of Custody Number: 21696
Address: 6543 N. Burlington Ave.	Telephone Number (Area Code)/Fax Number: (503)-823-5533	Lab Number: 331	Page 1 of 1
City: Portland / State: OR / Zip Code: 97203	Site Contact: M. Hauser	Lab Contact: J. Shackleford	
Project Name and Location (State): Portland Harbor Inline Samp	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Pest./PCBs - 8081	SVOCs - LHS Custom L.I.*	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn)	Total Mercury - EPA 7471	Special Instructions/ Conditions of Receipt
IL-52C-AAB520CB1-1005	10/25/05	10:17			X								X	X	X	X	
IL-52C-AAB520CB2-1005	↓	10:38			X								X	X	X	X	
IL-52C-AAB524-1005		11:08			X								X	X	X	X	
IL-52C AAB529-1005	↓	11:51			X								X	X	X	X	only 1 jar, notify of what tests can be run with limited sample

Cooler: ☐ Yes ☐ No Cooler Temp:_____	Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months	(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☒ 15 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Peter Abrams (Peter Abrams)	10/25/05	1505	1. Received By:	10/26/05	1045
2. Relinquished By:			2. Received By:		
3. Relinquished By:			3. Received By:		

Comments
* SVOCs LHS Custom List - includes PAHs + phthalates by SIM method

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

STL8274-580 (12/02)

APPENDIX B

SUPPORTING STORMWATER DATA

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LEGEND

- Sample Location
- Stormwater Sample
- Outfall Basins 52C & 53
- Port Basins
- City Outfall
- Non-City Outfall
- Storm Line
- Manhole (MH)
- DEQ ECSI Site
- Stormwater Permit
- Tax Lot
- River Mile Tenths

NOTES:

- All stormwater results presented in micrograms per kilogram (µg/Kg).
- Samples in OF53 were collected by COP and Port in different locations.
- Source: Anchor QEA, 2011

N

0 350 700
Feet

FIGURE B-1

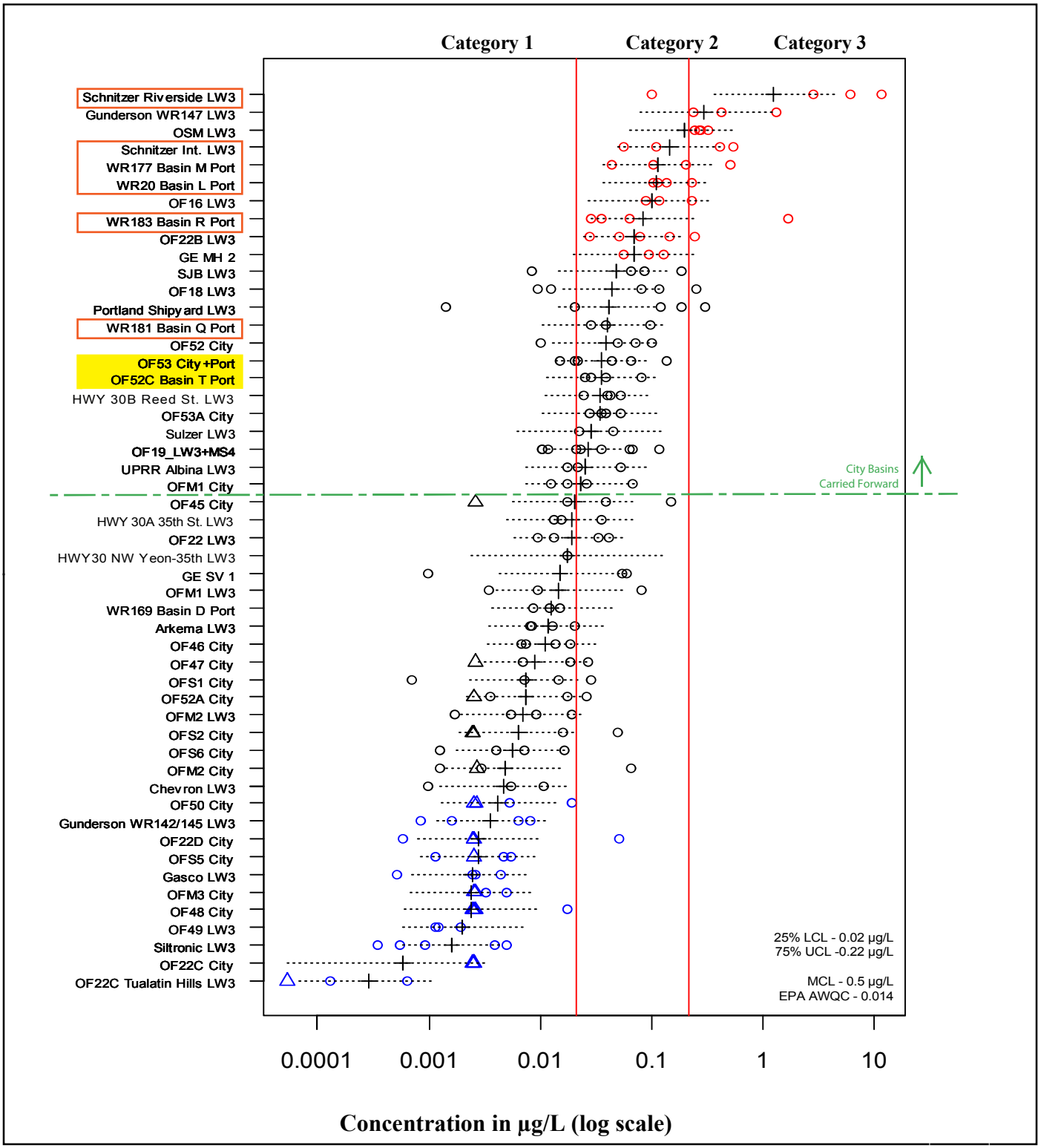
Basins 52C and 53
2007-2008 Stormwater Total PCB Results in Vicinity of N. Lombard Truck Route

Disclaimer:
Information contained on this map is accurate according to available records, however the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published.

Prepared By:
GSI, September 3, 2012
005_SC\RI\OF_Basin_52C\NLombard_PCBs

Source:
City of Portland BES, Aerial Photo 2010

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204-1912



LEGEND

Outfall Basins 52C & 53

Sites with Direct Access to N. Lombard Truck Route

FIGURE B-2

Total PCB Congeners in Harborwide Stormwater

From: Stormwater Evaluation Report (BES 2010a)

\\PDX\Projects\Portland\110 - BES\005 - SC\RI\OF Basin 52C_OF Basin 53\COP Reports\2010 52C & 53 ROW Solids TM\Figures

APPENDIX C

ENVIRONMENTAL DATA REVIEW

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Appendix C
Environmental Data Review

Current environmental conditions of properties located within and near Outfall Basins 52C and 53 were identified by reviewing information on properties (e.g., industrial facilities) within and in the vicinity of these basins. The purpose of this review was to identify properties with a recognized environmental condition[1] that may account for or contribute to the detected polychlorinated biphenyls (PCBs) concentrations in stormwater and stormwater solid samples collected from Basins 52C and 53. Information reviewed included:

- Oregon Department of Environmental Quality's (DEQ) Environmental Cleanup Site Information (ECSI) database to track sites in Oregon with known or potential contamination from hazardous substances, and to document sites where DEQ has determined that no further action is required.
- DEQ's Facility Profiler which includes permitted air and water discharges, hazardous and solid waste sites, cleanup sites, and leaking and underground storage tanks. This site contains information on closed facilities, completed cleanups, and past operations as well as data on current operations and activities.
- Portland Harbor Superfund Remedial Investigation and Feasibility Study documents.
- Other publicly available files including: DEQ project files, DEQ's Portland Harbor Milestone Report (DEQ, 2012a), Portland Harbor Remedial Investigation (Integral, et. al., 2011); and the Portland Harbor Feasibility Study (Anchor QEA, et. al., 2012).

The following sections summarize information on the environmental conditions at properties directly discharging stormwater to Basins 52C or Basin 53 or located in the proximity of these basins. Properties with identified or potential PCB contamination are noted and identified as potential sources of PCB contamination to these basins in Table 1 (see main report).

Properties within Basin 52C

Basin 52C is located in an area zoned for light industrial use. The basin receives stormwater from the following properties:

- *Port of Portland Property – 10400 N. Lombard Street/N. Roberts Avenue*. The Port's paved parking areas, located west of N. Lombard St., comprise a large percentage of the Basin 52C drainage area and have been used primarily for the storage of new cars. PCBs were not detected in 2005 solids samples collected from manholes along N. Roberts St. These results along with the known land use of the Port of Portland paved parking areas do

[1] For the purpose, of this report a recognized environmental condition is the presence or likely presence of any hazardous substances or petroleum on a property under conditions that indicate an existing release, a past release, or a material threat of release has occurred. Such release may be into the structures on the property, onto the ground (soil) or into the groundwater, stormwater, or surface water of the property.

not indicate that significant sources of PCBs could be draining to Basin 52C west of North Lombard St.

- *Borden Packaging & Industrial Products (ECSI No. 1277) - 10915 N Lombard St.* Basin 52C receives some stormwater drainage (primarily roof drainage) from Borden Packaging & Industrial Products (a.k.a., Momentive Specialty Chemicals, Inc.) while the remaining site stormwater discharges to dry wells on site. Borden, Inc. has manufactured resin and glue products at this facility since 1963, and similar operations were in place at the site before Borden purchased the facility (DEQ, 2012b). Elevated concentrations of chlorinated and alcohol-based solvents have been identified in groundwater, and DEQ has recommended an expanded preliminary site assessment. As of December 2010, the facility is registered with DEQ as a conditionally exempt hazardous waste generator in DEQ's Hazardous Waste Program. A review of DEQ's database files (DEQ, 2012b, 2012c) did not document PCB contamination at this facility.
- *Port of Portland Terminal 4 (T-4) Maintenance Facility -10801 N. Lombard St.* Basin 52C receives some stormwater drainage from the Port's T-4 Maintenance facility. DEQ identified the facility as a conditionally exempt hazardous waste generator based on cleaning liquids and spent halogenated solvents from flush rinsing parts. The facility does not report having generated any hazardous waste since 1994. A review of DEQ's database files (DEQ, 2012c) did not document PCB contamination at this facility.
- *Pioneer Wiping Cloth - 10707 N Lombard St*. Basin 52C receives some stormwater drainage from this property. A review of DEQ's database files (DEQ, 2012c) did not identify the property as a hazardous or solid waste site, cleanup site, or has having underground storage tanks and did not document PCB contamination at this facility.

Properties within Basin 53

Basin 53 is located in an area largely zoned for residential properties and does not receive any stormwater from facilities listed in DEQ's database files. No properties within Basin 53 are identified or suspected sources of PCBs.

Properties near Basins 52C and 53

Although no identified sources of PCBs are present within Basin 52C or Basin 53, the basins drain a portion of N. Lombard St. which is utilized by vehicles entering and exiting nearby industrial sites, several of which are documented sources of PCBs. Offsite migration of site solids (e.g., erodible soil, dust, particulates) to catch basins along N. Lombard St. may be contributing PCB contamination to Basins 52C and 53. Truck traffic from these facilities likely use N. Lombard St. for site access and may track PCB- contaminated solids into Basin 52C and Basin 53. DEQ ECSI facilities with recognized environmental conditions are summarized below:

- *Flint Ink Corporation (ECSI No. 1753) - 10653 N Lombard St*. Flint Ink has manufactured industrial inks at the facility since 1971. In September 1991, a spill of 1,000 gallons of petroleum-based ink occurred in the site's asphalt parking area and subsequently migrated into the site's dry well system. In October 1991, heavy rains caused the dry well system to overflow. A vacuum truck was used to capture the excess runoff.

However, some of the ink-laden runoff entered a City storm drain system on the adjacent property to the east. Ink was noted on surface water and banks of the Columbia Slough near the intersection of North Burgard Road and Columbia Boulevard, approximately 0.75 miles from the site. A fire in 1993 resulted in a release of inks and contaminated water from firefighting (DEQ, 2006a). Contaminated soil was removed and slag was used as backfill at the site. DEQ reports that moderate levels of heavy hydrocarbons and low levels of copper, chromium and zinc remain in shallow soils in some areas of the site, but that remedial actions taken at the site are protective of human health and the environment. DEQ issued a conditional no further action (NFA) for the facility in August 2006. A review of DEQ's database files (DEQ, 2012c; 2012d) does not indicate that the site is a source of PCBs.

- *Chemcentral Corporation (a.k.a., Harsh Investments, Univar Corporation) (ECSI No. 878) - 10821 N Lombard St.* Chemcentral Corporation has been a chemical distributor of solvents (alcohol, ketones, esters, aromatic hydrocarbons, and chlorinated hydrocarbons) since 1965 (DEQ, 2012e). Elevated concentrations of volatile organic compounds have been detected in soil and groundwater, and interim removal actions such as soil vapor extraction (SVE) have been implemented since underground storage tank decommissioning began in 1993. Additional site soil investigations were conducted in 2007 and 2008 to further assess the nature and extent of contamination, and in 2010, DEQ issued a record of decision (ROD) for the site. DEQ's ROD includes continued SVE remediation, enhanced bioremediation, monitored natural attenuation, and institutional controls as selected remedies for the site (DEQ, 2010a). Based on remediation wastes largely comprised of chlorinated solvents, the site was designated as a large quantity generator by DEQ's hazardous waste program. Although the Chemcentral Corp. is currently monitored as a DEQ cleanup site, a review of DEQ's database files (DEQ, 2012c; 2012e) does not indicate that the site is a source of PCBs.
- *KLIX Corporation (ECSI No. 1075) - 10771 N Lombard St.* KLIX Corp. manufactured janitorial and other cleaning supplies at the site from 1968 to 1992 and allegedly formulated/repackaged products containing pesticides and herbicides (DEQ, 2012f). Pesticides and VOCs have been identified in soil at concentrations below the DEQ industrial cleanup scenario. Additionally, Aroclor 1254 was detected at a concentration of 1.2 milligrams per kilogram (mg/Kg) in a single soil sample collected beneath the pavement (DEQ, 1995). In 1996, DEQ issued a conditional NFA for the facility contingent upon use of the site remaining industrial. The site is currently vacant and access to the site is restricted. A review of DEQ's database files (DEQ, 2012c; 2012f) show that the site was registered as a large quantity generator of hazardous waste under DEQ's Hazardous Waste Program, based on disposal of isopropyl alcohol. While PCBs have been documented at the site, it does not appear to be a current source of PCBs to stormwater because the identified contamination is capped by pavement.
- *Schnitzer-Burgard Industrial Park (ECSI No. 5324) - 12005 N Burgard Rd.* The 200-acre Burgard Industrial Park (BIP) is located just north/northwest of Basin 52C on the west side of N. Lombard St. before the road veers east and becomes N. Burgard Rd. Originally, the BIP was designated as ECSI No. 2355 but was later changed to ECSI No. 5324 when the Schnitzer Steel Industries (SSI) portion of the BIP was separated into its own ECSI listing. SSI which encompasses the southwestern portion of the industrial

park along the Willamette River retained the ECSI No. 2355. Currently, the boundary of the BIP encompasses several properties with individual ECSI listings including SSI, Boydstun Metal Works, and Portland Container Repair Company (DEQ, 2012g; 2012h; Schnitzer, 2009). An additional ECSI facility, Northwest Pipe Company, is completely surrounded by the BIP but is not a part of the BIP property. In addition to properties with individual ECSI listings, the BIP includes several non-contiguous properties leased by Boydstun Metal Works, Morgan CFS, Northwest Pipe, and SSI. All properties within the BIP are accessed by roads that branch off of N. Lombard St. PCBs have been listed as a stormwater and riverbank erosion COI for several properties within the BIP (Table 4.2-2 from Integral, et al., 2011). More detailed information on individual ECSI facilities within the BIP is provided below.

Schnitzer is conducting a number of onsite stormwater SCEs (Bridgewater, 2010a; 2011a; 2011b) and SCMs have focused on improving best management practices (DEQ, 2012g).

- *Schnitzer Steel Industries (ECSI No. 2355) - 12005 N Burgard Rd*. SSI has operated metals recycling, auto shredding, truck maintenance and repair, and warehousing operations in the southwest portion of BIP since the 1970s. PCBs have been identified as a site COI for the stormwater and riverbank erosion pathways (Integral, et al., 2011; DEQ, 2012a, 2012c, 2012h). PCBs have also been detected in soil, stormwater, and stormwater solids at the site. In 2007, as part of its Round 3A and 3B stormwater and sediment trap sampling, the LWG collected a sediment trap sample from non-city outfall WR384 which drained an area entirely encompassed by SSI's operations; a total PCB congener concentration of 9,900 microgram per kilogram (µg/Kg) was detected in the sediment trap sample (Anchor, et al., 2008). As part of the metal shredder replacement project, SSI excavated an estimated 5,500 cubic yards of soil and stockpiled the material on site. In the summer of 2007, five composite soil samples were collected from the soil stockpile and analyzed for PCBs, PAHs, petroleum hydrocarbons, and metals. Elevated concentrations of Aroclors 1254 and 1260 were detected in all soil composites with total PCB concentrations up to 6,600 µg/Kg (Jakubiak, 2008); the five composite samples have an average total PCB concentration of 4.6 mg/kg. A total PCB congener concentration of 9,902 µg/Kg was detected in a stormwater sediment sample collected at WR-384 by the LWG in 2007 (Anchor, et al., 2008).

  In 2010, as part of improvements to its stormwater conveyance system, SSI began paving a portion of its Rivergate facility, consolidated outfalls, and installed a stormwater treatment system intended to capture stormwater on operating portions of the scrap processing area (Schnitzer, 2009; Bridgewater, 2009; DEQ, 2010c). In addition to these SCMs, DEQ has requested that SSI evaluate drag out of contaminated solids via truck traffic.

- *Northwest Pipe Company (ECSI No. 138)* - 12005 N Burgard Rd. Northwest Pipe Company operates a steel pipe manufacturing plant on a 25-acre parcel completely surrounded by BIP. PCBs have been identified as a stormwater pathway COI for Northwest Pipe (Integral, et al., 2011) and have been detected at elevated concentrations in site soils. PCB Aroclors 1254 and 1260 have been detected in surface soil samples collected around the site at concentrations up to 12,500 µg/Kg (CH2M Hill, 2010; DEQ, 2012i); the average total PCB concentration in these surface soil samples is 2.2 mg/kg. PCB-containing

transformers have been documented at the site, and may have contributed to PCB contamination in some areas. In 1989, an Aroclor 1254 concentration of 31,300 µg/Kg was detected in a stained soil sample collected in a former transformer storage area (CH2M Hill, 2005). A large portion of the site's stormwater is discharged to non-city outfall WR-123 which also receives some discharges from the Joseph T. Ryerson and Boydstun Metal Works ECSI facilities. Total PCB congener concentrations of 1,423 µg/Kg and 1,332 µg/Kg were detected in stormwater sediment samples collected at WR-123 by the LWG in 2007 and 2008 (Anchor, et al., 2008).

In 2009, NW Pipe submitted a plan to DEQ focused on paving the southern half of its site (CH2M Hill, 2009).

- *Boydstun Metal Works (ECSI No. 2362)*. Boydstun Metal Works occupies the southeast portion of BIP along with Western Machine Works and Portland Blast Media. Operations in this portion of the site have included automotive trailer manufacturing, painting, sand blasting, and metal scrap storage. PCBs have been identified as a stormwater pathway COI for Boydstun Metal Works (Integral, et al., 2011). Additionally, PCBs have been detected in some site soil samples (DEQ, 2012j). Aroclor 1260 has been reported at concentrations from 500 to 15,300 µg/Kg in site soils (URS, 2000). Like Northwest Pipe, stormwater from the facility also discharges to outfall WR-123 in the International Slip Area (see above).
- *Port of Portland, Terminal 4 Slip 1 (ECSI No. 2356) – N. Lombard Street.* The Port's T-4, Slip 1 Property is located west of N. Lombard St. just south of the BIP. Access to the Port's T-4 properties is only possible via N. Terminal Rd. which connects to N. Lombard St. directly south of the Schnitzer Access Rd. PCBs have been identified as a stormwater pathway COI for Terminal 4, Slip 1 (Integral, et al., 2011). In 2007-2008, the Port collected sediment trap samples at the outfalls of several drainage basins within the T-4 area. PCBs were detected in all sediment trap samples; the highest concentration (1,400 µg/Kg) was detected in a sample representative of stormwater solids from the T-4, Slip 1 drainage basin (Basin R) directly south of the SSI property (Anchor et al., 2008).
- *Port of Portland, Terminal 4 Slip 3 (ECSI No. 272) – N. Lombard Street.* An interim groundwater remediation system was activated in 1993 to capture free product and contaminated groundwater before it discharged to the river. An upland remediation investigation, risk assessment, and feasibility study were performed and provide the basis for the ROD (DEQ, 2003). The selected remedial action includes removal of non-aqueous phase liquid (NAPL) and contaminated groundwater through extraction wells and removal of contaminated soil at the Slip 3 riverbank. The Port continues NAPL recovery and monitoring as part of the remedy. Additional work is required in the former Quaker State area, areas identified with pencil pitch contamination, and to assess stormwater. PCBs were also detected in sediment trap samples receiving stormwater drainage from basins within the T-4, Slip 3 area.
- *Port of Portland, Terminal 4 Auto Storage (ECSI No. 172) – 10400 N. Lombard Street.* Site investigation data showed low levels of petroleum-related chemicals in soil and groundwater at levels protective of human health and the environment. DEQ issued a NFA letter in June 2004 and determined that the site does not appear to be a current source of contamination to the Willamette River (DEQ, 2004).

- *Northwest Container (aka Union Carbide) (ECSI No. 176).* The former Union Carbide facility is comprised of three properties located at 11920 N. Burgard Rd., 9707 N. Columbia Blvd, and 9645 N. Columbia Blvd (DEQ, 2009). The facility is located east of N. Lombard St. across from the Boydstun Metal Works facility. WMR, LLC currently owns the westernmost 74 acres of the Union Carbide facility (11920 N. Burgard Rd.) and leases the property to Northwest Container Services which operates a container storage business on the property. Northwest Container vehicle traffic access the site via N. Burgard Rd. Stormwater was identified as a potentially complete pathway to the Willamette River for PCBs at the Union Carbide Facility in the *Portland Harbor Remedial Investigation Report* (Integral, et al., 2011). In 1999, shallow soils and concrete that had been contaminated with PCBs associated with an on-site electrical substation were removed. Confirmation sampling indicated that residual concentrations of PCBs in soil were below a cleanup criteria of 1,200 µg/Kg for unrestricted land use (DEQ, 2005). In 2005, DEQ issued a notice of no further action for the property, but indicated that the NFA would not be final until a cleanup decision is made for the 9707 and 9645 properties. In 2009, DEQ issued a ROD for selected remedial actions at the three properties (DEQ, 2009; DEQ, 2012c).
- *Portland Container Repair Corp. (ECSI No. 2375) – 9449 N Burgard Way.* The approximate 12-acre property is located in the northern portion of the BIP. The majority of the property, used for the storage of empty intermodal containers, is flat and covered with gravel. However, a roughly 5,600 square foot building is located in the western portion of the property, and the area immediately around the building is paved with concrete. Portland Container receives, inspects, repairs, cleans, and stores empty intermodal shipping containers. Major repairs activities are performed inside the building (Bridgewater, 2000). PCB concentrations up to 8,600 µg/Kg were detected in site soils (EMS, 1992; 1993) and as high as 19,700 µg/Kg in subsequent soil confirmation samples collected from locations previously determined to contain elevated PCB concentrations. In July 1994, approximately 50 tons of contaminated soil was excavated from the areas determined to have elevated PCB concentrations and disposed off-site (QGNW, 1994).
- *RoMar Transportation Systems, Inc. (ECSI No. 2437) – 9333 N. Time Oil Road.* The western portion of the property was developed as a warehouse and trucking operation for general commodities (e.g., clothing, paper, furniture). The eastern portion of the property is currently undeveloped. Prior to 1994, the site was used to store various scrap metal and wood items, some of which reportedly PCBs. Historic storage practices on the site resulted in PCB contamination of shallow soil. In January 2006, approximately 95 tons of PCB contaminated soil were excavated and disposed off-site. Confirmation samples from the perimeter and floor contained up to 570 µg/Kg of total PCBs. In 2006, DEQ issued a notice of no further action for the property (DEQ, 2006b; 2006c; 2012k).

APPENDIX D

FIELD PHOTOGRAPHS

North Lombard PCB Source Investigation

September 2010 N. Lombard Solids Sampling

Photo 1 (September 7, 2010). Location of surface sediment sample collected on N. Sever Rd. just west of intersection with N. Burgard Rd.

Photo 2 (September 7, 2010). Sweeping of sediments along N. Sever Rd. at subsample area 1.

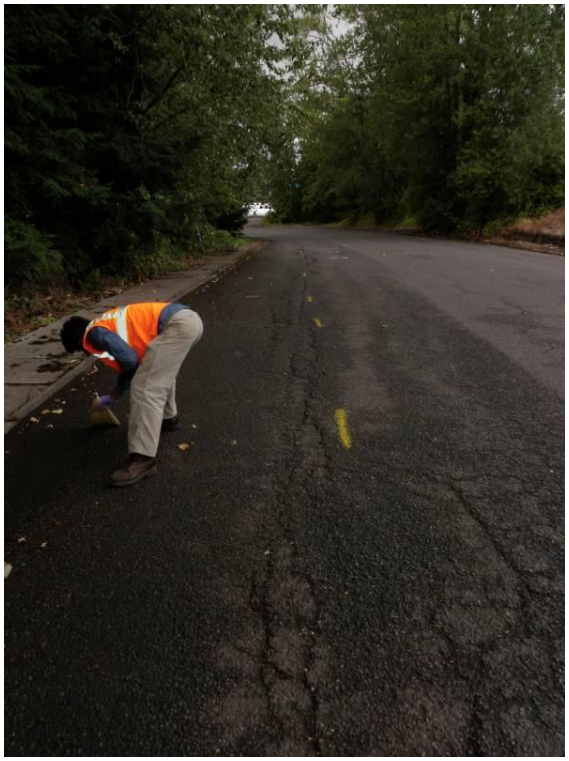

Photo 3 (September 7, 2010). Sweeping of sediments from cracks and depressions on N. Sever Rd. at subsample area 2.

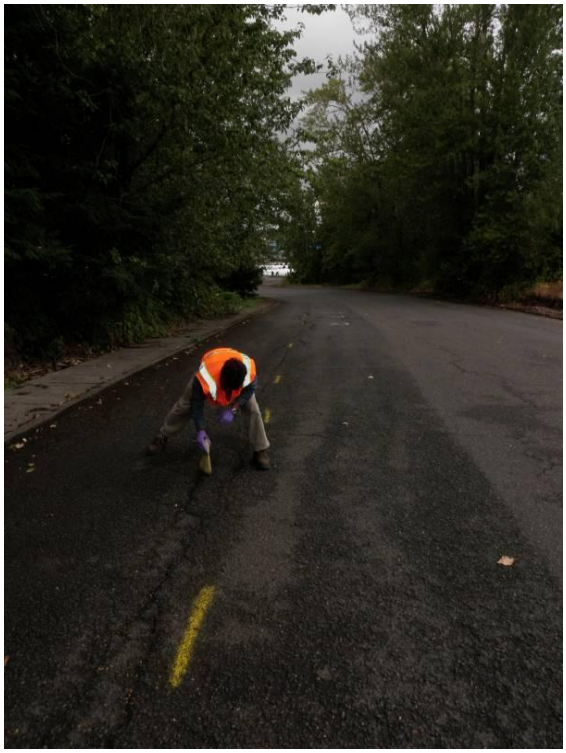

Photo 4 (September 7, 2010). Sweeping of sediments from cracks and depressions on N. Sever Rd. at subsample area 3.

Photo 5 (September 7, 2010). Accumulated solids on N. Sever Rd near intersection with N. Burgard at subsample area 4.

Photo 6 (September 7, 2010). Final homogenized composite sweepings sample (comprised of sub-samples areas 1-4) from N. Sever Rd. near intersection with N. Burgard Rd.

Photo 7 (September 7, 2010). Location of surface sediment sample collected on N. Lombard St. at intersection with Schnitzer Access Rd.

Photo 8 (September 7, 2010). Surface sediments sampled from cracks and depressions in N. Lombard at intersection with Schnitzer Access Rd.

Photo 9 (September 7, 2010). Final homogenized composite surface sweepings sample from intersection of Schnitzer Access Rd. with N. Lombard St.

Photo 10 (September 7, 2010). Catch basin ANF066 before sampling for Basin 52C catch basin composite sample (North Lombard-1).

Photo 11 (September 7, 2010). Catch basin ANF067 with filter fabric before sampling for Basin 52C catch basin composite sample (North Lombard-1).

Photo 12 (September 7, 2010). Catch basin ANF069 before sampling for Basin 52C catch basin composite sample (N. Lombard-1).

Photo 13 (September 7, 2010). Sampling of catch basin ANJ736 for Basin 52C catch basin composite sample (N. Lombard-1).

Photo 14 (September 7, 2010). Sampling of catch basin ANF072 for Basin 52C catch basin composite sample (N. Lombard-1).

Photo 15 (September 7, 2010). Catch basin ANF074 before sampling for Basin 52C catch basin composite sample (N. Lombard-1).

Photo 16 (September 7, 2010). Final homogenized composite sample (N. Lombard-1) from N. Lombard St. catch basins (ANF066, ANF067, ANF069, ANF072, ANF074, ANJ736) within Basin 52C.

Photo 17 (September 8, 2010). Catch basin ANK400 before sampling for composite sample from catch basins between Basin 52C and Basin 53 (N. Lombard-2).

Photo 18 (September 8, 2010). Catch basin ANK394 before sampling for composite sample from catch basins between Basin 52C and Basin 53 (N. Lombard-2).

Photo 19 (September 8, 2010). Catch basin ANK382 before sampling for composite sample from catch basins between Basin 52C and Basin 53 (N. Lombard-2).

Photo 20 (September 8, 2010). Catch basin ANK385 before sampling for composite sample from catch basins between Basin 52C and Basin 53 (N. Lombard-2).

Photo 21 (September 8, 2010). Final homogenized composite sample (N. Lombard-2) from catch basins (ANK382, ANK385, ANK394, ANK400) between Basin 52C and Basin 53.

Photo 22 (September 8, 2010). Catch basin ANF032, before sampling for Basin 53 catch basin composite sample (N. Lombard-3).

Photo 23 (September 8, 2010). Catch basin ANF036, before sampling for Basin 53 catch basin composite sample (N. Lombard-3).

Photo 24 (September 8, 2010). Catch basin ANF037, before sampling for Basin 53 catch basin composite sample (N. Lombard-3).

Photo 25 (September 8, 2010). Catch basin ANF041, before sampling for Basin 53 catch basin composite sample (N. Lombard-3).

Photo 26 (September 8, 2010). Catch basin ANF042, before sampling for Basin 53 catch basin composite sample (N. Lombard-3).

Photo 27 (September 8, 2010). Final homogenized composite sample (N. Lombard-3) from catch basins (ANF032, ANF036, ANF037, ANF041, ANF042) within Basin 53.

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APPENDIX E

FIELD NOTES

North Lombard PCB Source Investigation

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Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 9/8/10
Page: 1 of 1
Collected By: ASA, PTB

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 **Matrix:** SEDIMENT

Requested Analyses

Basin 52C & 53 Inline

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PCB Congeners (All 209)	Organics: TOC	Organics	Organics	Organics	General: Total Soldis	General	General	Metals	Field Comments
FO105874	IL-52C-BURGARD1-0910 N SEVER & BURGARD	52C_1	9/7/10	1404	C	●	●	●				●				
FO105875	IL-52C-BURGARD2-0910 LOMBARD AT SCHNITZER	52C_2	9/7/10	1452	C	●	●	●				●				
FO105876	IL-52C-LOMARD1-0910 CATCH BASIN COMP1	52C_3	9/7/10	1539	C	●	●	●				●				
FO105877	IL-CS54-LOMBARD2-0910 CATCH BASIN COMP2	CS54_1	9/8/10	1122	C	●	●	●				●				
FO105878	IL-53-LOMBARD3-0910 CATCH BASIN COMP3	53_1	9/8/10	1235	C	●	●	●				●				
FO105879	DUPLICATE	DUP	9/7/10		C	●	●	●				●				

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature:	Signature:	Signature:	Signature:
Time: 1633	Time:	Time:	Time:
Printed Name: Andrew Acrasberg	Printed Name:	Printed Name:	Printed Name:
Date: 9/8/10	Date:	Date:	Date:
Received By: 1.	**Received By:** 2.	**Received By:** 3.	**Received By:** 4.
Signature:	Signature:	Signature:	Signature:
Time:	Time:	Time:	Time:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Date:	Date:	Date:	Date:

City of Portland
Environmental Services

DAILY FIELD REPORT

Project PORTLAND HARBOR INLINE SAMP
Project No. 1020.001
Location BASIN 52C pt 53
Date 9/7/10
Subject Surface & CB samplings
By MJS, JJM, PTB

1345 Arrive on-site at N Burgard & N Sever. Meet up with Andrew Davidson, GSI, who provides direction for sampling locations. Locations chosen to avoid runoff from N Burgard & to sample N Sever sediment that may be coming up the hill transported by trucks & traffic.

1404 Collected sample to ensure sediment collected was ~~transpor~~ PTB most likely to have been transported up the hill. This included seds on the downhill side of the traffic median as well as seds in cracks in the asphalt on N Sever and seds accumulated on downhill side of crown up against sidewalk curb. Filled samplejars. Gave point code 52C-1.

1430 Arrive on-site N Lombard & Schnitzer Access road. Set up TC for safe work zone. Seds seem to be accumulated in the asphalt cracks mostly. Cracks & seds were sampled where located in public right of way.

1452 Sample jars filled. Given point code 52C-2

1506 Began sampling Lombard

1539 Collected last sub-sample for Lombard, Composited, Filled DUP jars here. Gave sample point code ~~LOMBARD~~ 52C-3

Attachments

52C-1

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

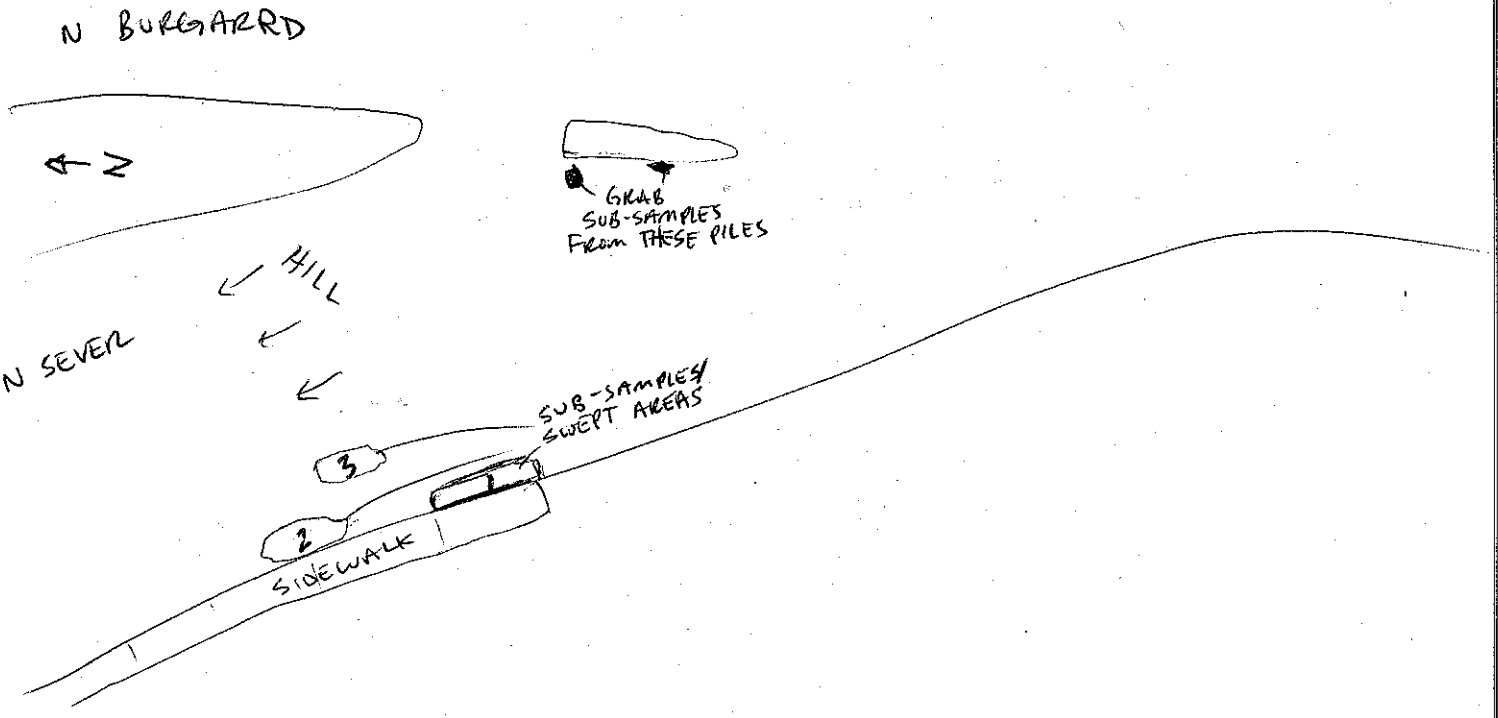
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: PORTLAND HARBOR INLINE SAMP			Project Number: 1020.001
Sampling Team: JJM, MJS, PTB	Date: 9/7/10	Arrival Time: 1345	Current Weather Conditions/Last Rain: Overcast / This morning
Basin: 52C	Node: NA		Subbasin: NA
Sampling Location Description/Address: N Sewer at intersection with N Burgard			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	NA
Does river appear to back up to this location? Describe rate/color/odor of flow:	NA
Are sediments observed ~~in the line?~~ on street	Yes, pockets along triangle as well as seds accumulated on street and along forested edge.
Are sample-able quantities of sediments present in the line?	Yes
Describe lateral extent of sample-able sediments present in the line:	Trace solids on street by sidewalk as well as pockets

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.



52C-1

Date: 9/7/10	SECTION 2 - SAMPLE COLLECTION REPORT	Node: N Sever & N Burgard

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket & Corn Whisk Broom ☐ Other (Describe)
Equipment Decontamination process:	☒ Per SOP7.01a (except for Broom, which had no decon OK'd per customer communication w/ Linda Schettler) ☐ Other (Describe)
Sample date: 9/7/10 / Sample time: 1404	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-52C-BURGARD1-0910
Sample location description: (number of feet from node of entry)	SUB-SAMPLES TAKEN FROM N SEVER IN ROAD AND ALONG CURBS.
Sample collection technique:	WHERE ENOUGH SEDS A DIRECT SCOOP WAS TAKEN. WHERE TRACE SEDS A BROOM WAS USED TO MAKE A PILE THAT WAS THEN SCOOPED INTO THE BUCKET.
Describe Color of sample:	BROWN / DARK
Describe Texture/Particle size:	60% FINES & DECOMPOSED ORGANICS, 20% coarse gravel 20% leaves & organics
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	None
Describe depth of solids in area where sample collected:	Trace to 0.5"
Describe amount and type of debris in sample:	Leaves, glass & asphalt at 20% of bulk sample
Amount and type of debris removed from final sample:	20% excluded including leaves, glass & asphalt
Compositing notes: Homogenized in sample bucket	
Sample Jars Collected (number, size, full or partial)?	5 full 4 oz. jars

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				
Lab ID: FO105874	Duplicate sample collected? Y (N)	Dupe ID		
Duplicate sample identification # on COC:				

Any deviations from standard procedures: Yes, sweepings taken using corn husk broom.

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	23
Plan view of sediments inline	12-14 new triangle, 15-19 west side sweeping,
Homogenized sample (sediment in bowl)	20-22
Other?	

52C-2

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

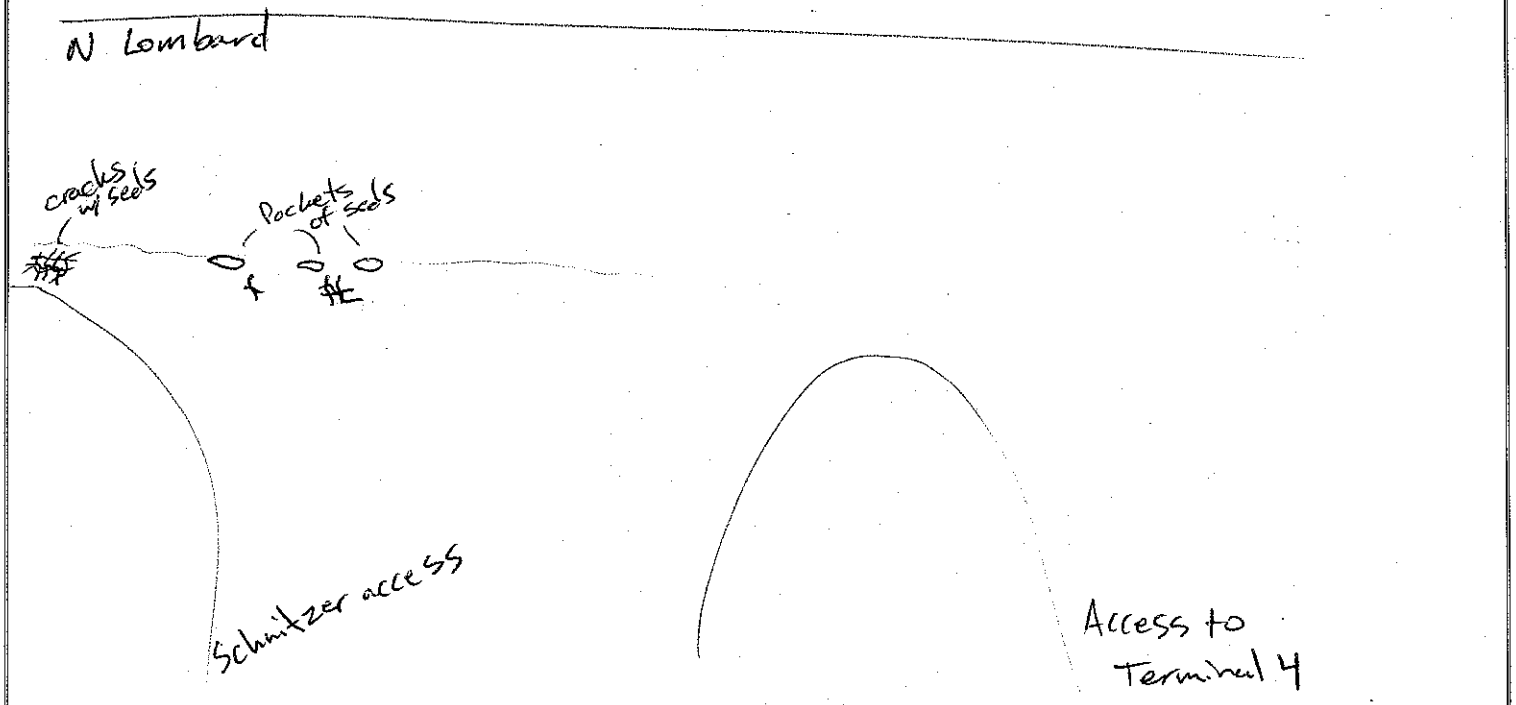
INLINE SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp			Project Number: 1020.001
Sampling Team: JJM, MJS, PTB	Date: 9/7/10	Arrival Time: 1430	Current Weather Conditions/Last Rain: Overcast/This morning
Basin: 52C	Node: NA		Subbasin: NA
Sampling Location Description/Address: At Schnitzer access road and N Lombard			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe any flowing or standing water observed in the line?	NA
Does river appear to back up to this location? Describe rate/color/odor of flow:	NA
Are sediments observed ~~in the line?~~ on the street	Yes, in cracks in the asphalt.
Are sample-able quantities of sediments present in the line?	Yes
Describe lateral extent of sample-able sediments present in the line:	Trace amounts

SITE DIAGRAM: Include street intersections/laterals/catch basins/MH's/driveways cuts and extent of solids accumulation.



52C-2

Date: 9/7/10	SECTION 2 - SAMPLE COLLECTION REPORT	Node: N Lombard at Schnitzer access
Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket & corn whisk broom ☐ Other (Describe)	
Equipment Decontamination process:	☒ Per SOP7.01a (Broom not decon'ed as approved by customer, Linda Scheffler) ☐ Other (Describe)	
Sample date: 9/7/10	Sample time: 1452	Sample Identification: (IL-XX-NNNNNN-mmyy) IL-52C-BURGARD2-0910
Sample location description: (number of feet from node of entry) cracks with seds along edge of right of way		
Sample collection technique:	Manual scoops taken with spoon and sweeps taken with broom	
Describe Color of sample:	Brown	
Describe Texture/Particle size:	40% coarse gravel, 30% sand, 25% decomposed organics, 5% organics	
Describe visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.):	None	
Describe depth of solids in area where sample collected:	Trace	
Describe amount and type of debris in sample:	5% metal chunks excluded	
Amount and type of debris removed from final sample:	5% metal chunks excluded	
Compositing notes: Homogenized in sample bucket		
Sample Jars Collected (number, size, full or partial)? 5 full 4 oz. jars		

If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).				

Lab ID FO105875	Duplicate sample collected? Y (N) Dupe ID
Duplicate sample identification # on COC:	

Any deviations from standard procedures: Yes, corn broom used to sweep into trowel then transferred to bucket

SECTION 3 - PHOTOGRAPH LOG

Overview of node showing drainage area	24, 25
Plan view of sediments inline	27+28
Homogenized sample (sediment in bowl)	26
Other?	

52C-3 ~~LOMBARD~~ 1

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

CATCH BASIN SOLIDS SAMPLING
FIELD DATA SHEET

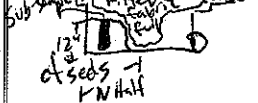
Project Name: Portland Harbor Inline Samp			Project Number: 1020.001
Sampling Team: JM, MS, PTB	Date: 9/7/10	Arrival Time: 1506	
Basin: 52C	Node: ANF067, ANF066, ANF069, ANF072, ANF074, ANJ736	Address: N Lombard / Catch Basin compl	
Current weather and last known rainfall: Overcast, this morning & during sampling			

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

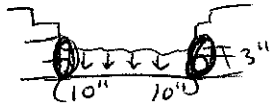
Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	CBs are along major route to/from Rivergate industrial area and sees heavy truck traffic ANJ736 had creosote from pole adjacent to CB running onto asphalt.
Describe debris and/or clogging around, or in catch basin grate/cover:	ANF067 - 100% - Filter fabric full of seds, ANF066 - 10% w/ seds & rocks ANF069 - 10% w/ seds, ANJ736 - 20% w/ seds, ANF072 - 10% ANF074 - 10%
Is there standing water in catch basin?	ANF067 - No, ANF066 - No, ANF069 - No, ANJ736 - No, ANF072 - No, ANF074 - No
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	ANF067 - No, ANF066 - No, ANF069 - No, ANJ736 - No ANF072 - No, ANF074 - No
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	ANF067 - 12" deep in N half, ANF066 - 3" on E side, 0" on W side ANF069 - 5" deep in NE corner, ANJ736 - 1½-4" in ANF072 - NE corner 4" to S w/ 0, ANF074 - 2" deep

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.

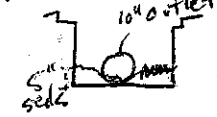
ANF067 - 16" ~~wide~~ ~~long~~ x 32" long x 19½" deep w/ 10" outlet



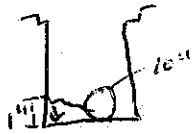
ANF066 - 28" wide x 33" long x 31" deep w/ 10" inlet & 10" outlet



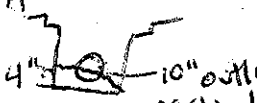
ANF069 - 16" wide x 32" long x 23" deep w/ 10" outlet



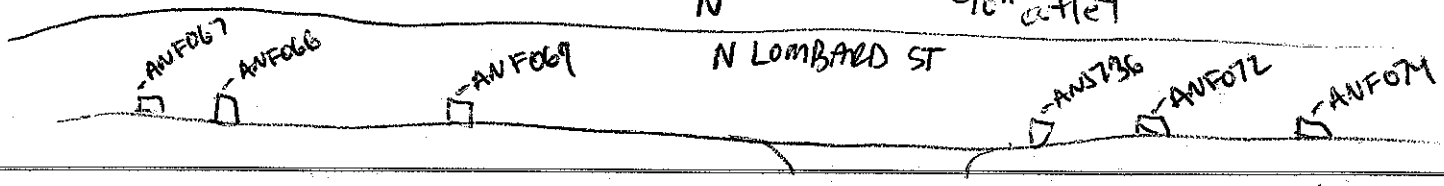
ANJ736 - 16" wide x 32" long x 48" deep w/ 10" outlet



ANF072 - 28" wide x 32" long x 28" deep w/ 10" outlet



ANF074 - 16" wide x 32" long x deep w/ 10" outlet



52C-3

Date: 9/7/10	SECTION 2 - SAMPLE COLLECTION REPORT	Node: LOMBARDI

Sampling Equipment:	X Stainless steel spoon & stainless steel bucket □ OTHER (DESCRIBE)
Equipment decontamination procedure:	X Per SOP7.01a □ OTHER (DESCRIBE)
Sample date: 9/7/10	Sample time: 1539
Sample Identification Code: IL-52C-LOMBARDI-0910	Sample collection technique and if/how overlying water was removed: Per SOP 5.01a
Subsample number and location:	6 sub-samples, 1 @ each CB
Color of sample:	Very dark brown
Texture/particle size:	50% decomposed organics, 30% coarse gravel, 20% sand
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	None
Amount and type of debris in bulk sample:	Very coarse gravel + leaves 20%
Amount and type of debris removed from final sample:	All debris removed
Compositing notes:	Homogenized in sample bucket
Sample jars collected (number, size, full or partial)?	5 full 4 oz. jars
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID: FO105876	Duplicate sample collected? (Y)/N FO105879
Duplicate sample identification # on COC:	
Any deviations from standard procedures:	None

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	
Catch basin plan view prior to sampling showing solids	ANF067-29,30,31,32, ANF066-33, ANF069-34, ANF736-35,36, ANF072-37, ANF074-38
Lateral connections to/from CB	
Homogenized sample (sediment in bowl)	39,40

City of Portland
Environmental Services

DAILY FIELD REPORT

Page 1 of 1

Project PORTLAND HARBOR INLINE SAMP
Project No. 1020.001
Location BASIN 52C, Col. Slough 54 & 53
Date 9/8/10
Subject CB samplings
By AJA, PTB

1037 Arrive on-site Lombard 2, composite of 4 CBs ANK400, ANK394, ANK382, ANK385. No solids on CB floors. Spoke w/ Linda Scheffler regarding collection of seds from lip of CB & in grate cover & Approved collection of whatever solids appeared to have potential of entering CB where already associated with it (i.e. on lip & in grate).

1122 Finished solids collection. Filled jars and gave point code CS54-1 & location code IL-CS54-LOMBARD2-0910.

1142 Arrive on-site Lombard 3, composite of 5 CBs ANF032, ANF036, ANF037, ANF041, ANF042.

1235 Finished solids collection. Filled jars and gave point code 53-1 & location code IL-53-LOMBARD3-0910

Attachments

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CS54_1

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

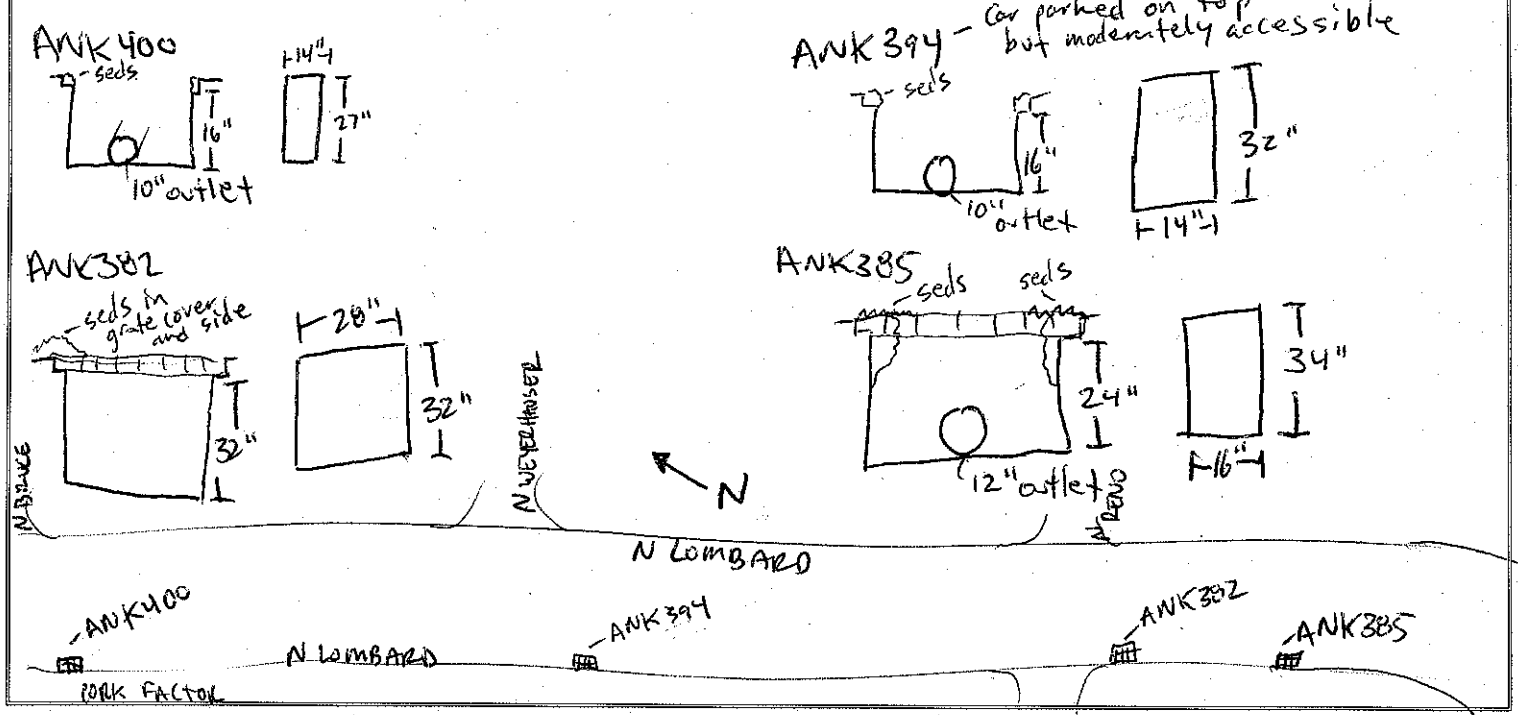
CATCH BASIN SOLIDS SAMPLING
FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp		Project Number: 1020-001
Sampling Team: AJA, PTB	Date: 9/8/10	Arrival Time: 1037
Basin: CS54	Node: ANK400, ANK394, ANK382, ANK385	Address: N Lombard / CATCH BASIN COMP 2
Current weather and last known rainfall: Partly sunny / Yesterday afternoon ~ 0.25"		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Heavy truck traffic both to and from Rivergate industrial area.	
Describe debris and/or clogging around, or in catch basin grate/cover:	ANK400 - 99% - Trash & leaves ANK382 - 60% - Leaves & seds	ANK394 - 99% trash & leaves ANK385 - 10% clogged w/ seds
Is there standing water in catch basin?	ANK400 - No ANK382 - No	ANK394 - No ANK385 - No
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	ANK400 - None ANK382 - None	ANK394 - None ANK385 - None
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	ANK400 - No solids on bottom of CB only along lip ~ 1½" deep & in CB grate itself. ANK382 - No solids on bottom of CB only in grate & along edge	ANK394 - No solids on bottom of CB only in grate and on lip ANK385 - No solids on bottom of CB Only in grate & adhered to wall

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



CS54-1

Date: 9/8/10	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ANK400, ANK394, ANK382, ANK385

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☒ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date: 9/8/10	Sample time: 1122
Sample Identification Code: IL-CS54-LOMBAR02-0910	Sample collection technique and if/how overlying water was removed: Per SOP 5.01a.
Subsample number and location:	one subsample taken from each CB grate/lip.
Color of sample:	Dark brown
Texture/particle size:	80% fines, 15% organics, 3% sands, 2% fine gravels
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	None
Amount and type of debris in bulk sample:	<1% plastics
Amount and type of debris removed from final sample:	All debris encountered was removed
Compositing notes: Homogenized in sample bucket	
Sample jars collected (number, size, full or partial)? 5 full 4 oz. jars	
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO105877	Duplicate sample collected? Y (N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	ANK400-53-55 ANK394-56-57 ANK382-58 ANK385-59
Catch basin plan view prior to sampling showing solids	—
Lateral connections to/from CB	—
Homogenized sample (sediment in bowl)	60-62

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
Water Pollution Control Laboratory
6543 N. Burlington Ave.,
Portland, OR 97203-5452

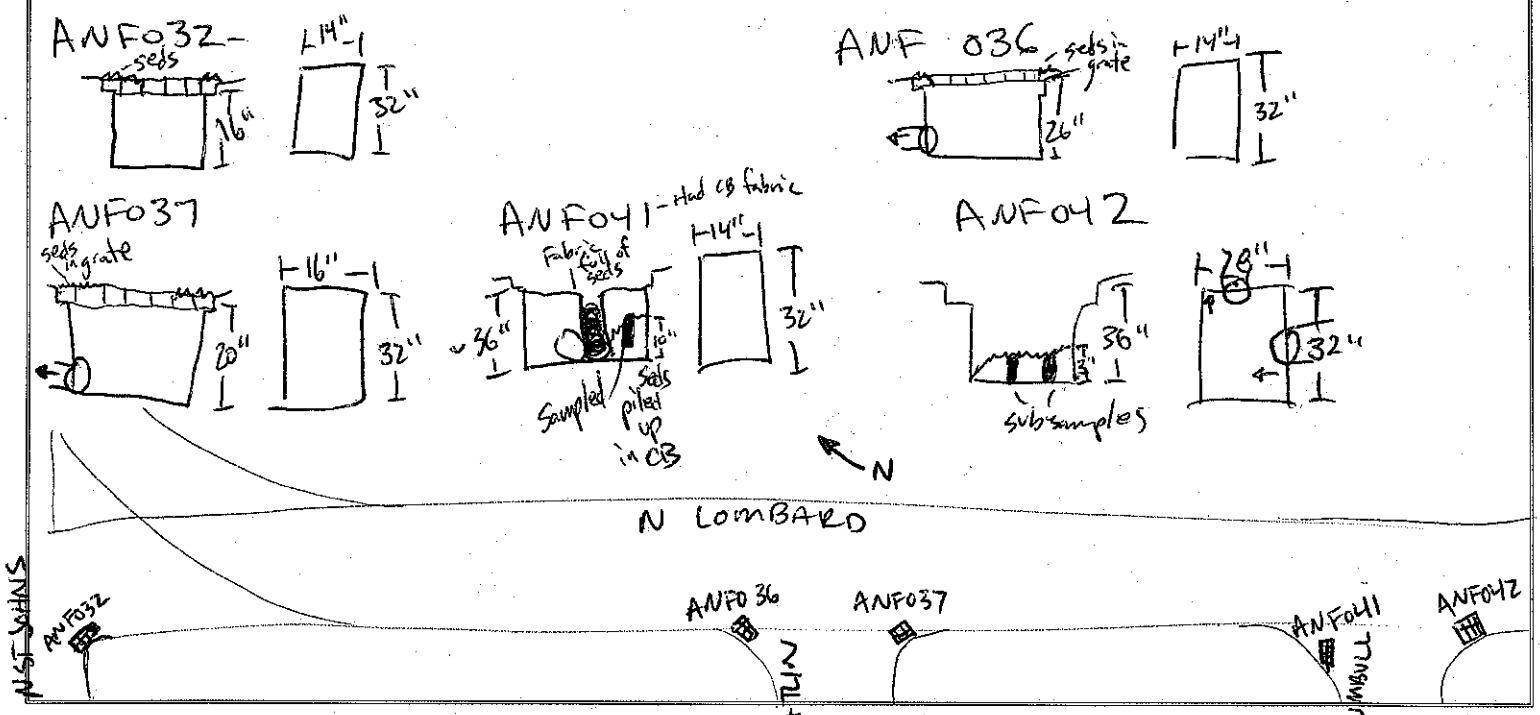
CATCH BASIN SOLIDS SAMPLING
FIELD DATA SHEET

Project Name: Portland Harbor Inline Samp		Project Number: 1020.001
Sampling Team: ASA, PTB	Date: 9/8/10	Arrival Time: 1142
Basin: 53	Node: ANF032, ANF036, ANF037, ANF041, ANF042	Address: N Lombard / CATCH BASIN comp 3
Current weather and last known rainfall: Partly sunny / Yesterday afternoon ~0.25"		

SECTION 1 - PRE-SAMPLING VISUAL OBSERVATION REPORT

Describe potential solids or contaminant sources that could impact catch basin (const. activities, erosion, vehicles, material storage, onsite processes, etc.):	Heavy truck traffic to/from Riverside Industrial Area.
Describe debris and/or clogging around, or in catch basin grate/cover:	ANF032 - 100% of leaves, apples, paper ANF036 - 10% leaves+seeds ANF037 - 95% leaves+ seeds ANF042 - 40% clogged w/ leaves+ paper ANF041 - Filter fabric present 90% clogged
Is there standing water in catch basin?	None
Describe visual or olfactory observations of contamination at catch basin if any (odor, sheen, discoloration, etc.)	None
Describe depth of sediments present in catch basin and the total depth of the catch basin or sump:	ANF032 - None in bottom, only in grate ANF036 - None in CB floor. Only in grate + lip. ANF037 - Solids in CB grate + lip not in CB floor ANF041 - Filter fabric full of seeds and CB w/ overflow from hole in fabric. ANF042 - Piles in NE ~3"

SITE DIAGRAM: Include street intersections, inlets and outlets, catch basin dimensions, etc.



53-1

Date: 9/8/10	SECTION 2 - SAMPLE COLLECTION REPORT	Node: ANF032, ANF036, ANF037, ANF041, ANF042

Sampling Equipment:	☒ Stainless steel spoon & stainless steel bucket ☐ OTHER (DESCRIBE)
Equipment decontamination procedure:	☒ Per SOP7.01a ☐ OTHER (DESCRIBE)
Sample date: 9/8/10	Sample time: 1235
Sample Identification Code: IL-53-LOMBARD3-0910	Sample collection technique and if/how overlying water was removed: Per SOP 5.01a
Subsample number and location:	One ~~each~~ FTB from each CB
Color of sample:	Dark brown
Texture/particle size:	90% fines, 5% coarse organics, 4% sand, 1% garbage
Visual or olfactory evidence of contamination in bulk sediment sample (odor, sheen, discoloration, etc.)	None
Amount and type of debris in bulk sample:	5% coarse organics, 1% garbage
Amount and type of debris removed from final sample:	Removed the largest of the organics & the garbage
Compositing notes: Homogenized in sample collection bucket	
Sample jars collected (number, size, full or partial)? 5 full 4 oz. jars	
If not enough sample to fill all of the jars, list jars collected and related analytes sampled (as per analyte priority list in work order).	
Lab ID FO105878	Duplicate sample collected? Y (N) Dupe ID
Duplicate sample identification # on COC:	
Any deviations from standard procedures: None	

SECTION 3 - PHOTOGRAPH LOG

Overview of CB showing drainage area	ANF032 - 70+69+73 ANF036 - 63 ANF037 - 64, 65
Catch basin plan view prior to sampling showing solids	ANF041 - 066, 67 ANF042 - 68
Lateral connections to/from CB	-
Homogenized sample (sediment in bowl)	71-72

APPENDIX F

LABORATORY REPORTS AND DATA REVIEW MEMORANDUM

North Lombard PCB Source Investigation

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GSI Water Solutions, Inc.
55 SW Yamhill Street, Suite 400 Portland, OR 97204
P: 503.239.8799 F: 503.239.8940
info@gsiwatersolutions.com www.gsiwatersolutions.com

Laboratory Data QA/QC Review
Source Investigation
City Outfall Basins 52C and 53

To: File

From: Andrew Davidson, GSI Water Solutions, Inc. (GSI)

Date: April 7, 2011

This memorandum presents a quality assurance/quality control (QA/QC) review of the laboratory data generated from a source control investigation sampling event conducted by the City of Portland (City) in and adjacent to Outfall Basins 52C and 53 on September 7 and 8, 2010. Two composited surface solids (sweeping) samples (FO105874 and FO105875), three composited catch basin solids samples (FO105876, FO105877, and FO105878), and one duplicate composited catch basin sample (FO105879) were collected and submitted for analyses.

The laboratory analyses for these source control program samples were completed by the City's Bureau of Environmental Services (BES) Water Pollution Control Laboratory (WPCL) and subcontracted laboratories. The following laboratories conducted the analyses listed on all samples:

- BES WPCL
    - Total Solids – SM 2540G
    - Polychlorinated Biphenyls (PCBs) Aroclors – EPA 8082
- Test America (TA)
    - Total Organic Carbon (TOC) – EPA 9060 MOD
- Pace Analytical Services (Pace)
    - PCB Congeners – EPA 1668A

The WPCL summary report and the subcontracted laboratory reports for all analyses associated with this sampling event are attached. The WPCL summary report comments that unless otherwise noted, all analytical QA/QC criteria were met for these samples including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

The following QA/QC review of the analytical data is based on the available documentation provided by the subcontracted laboratories and on exceptions noted in the WPCL summary report. The QA/QC review of the analytical data consisted of reviewing the following elements for each laboratory report, if applicable and/or available:

- Chain-of-custody – for completeness and continuous custody
- Analysis conducted within holding times
- Chemicals of interest detected in method blanks
- Surrogate recoveries within laboratory control limits
- Internal standard recoveries within accuracy control limits
- Matrix spike and matrix spike duplicate (MS/MSD) sample results within laboratory control limits
- Laboratory control and duplicate laboratory control (LC/DLC) sample recoveries within laboratory control limits

The results of the QA/QC review of the subcontracted laboratory reports are presented below.

Chain-of-Custody

The chain-of-custody forms showed continuous custody of the samples. The chain-of-custody procedures appear to have been adequate indicating that sample integrity was maintained throughout the sample collection and delivery process.

Analysis Holding Times

Samples for all analyses were extracted and analyzed within the recommended method-specific holding times.

Method Blanks

Methods blanks were processed during the subcontracted laboratory analyses of PCB congeners and TOC. No analytes were detected in either method blank.

Internal Standard Recoveries

Isotopically-labeled internal standard recoveries were processed during the laboratory analysis of PCB congeners. Internal standard recoveries are within control limits with three exceptions in the QC samples, which are flagged "R" in the subcontracted laboratory report. All internal standards analyzed with the field samples were recovered within control criteria, and the data are not qualified further.

Interfering background constituents impacted the measurement of some PCB congeners and an internal standard. The affected values are flagged "I" in the subcontracted report to indicate that incorrect isotope ratios were obtained. These values are qualified as estimated maximum possible concentrations (EMPCs). Because the EMPC value(s) are not significant relative to the total PCB concentration (i.e. <1%), total homolog and total PCB concentrations are considered only slightly biased.

Laboratory Control Samples

Two sets of LC/DLC samples were processed during the laboratory analysis of PCB congeners. All LC and DLC recoveries and RPDs for native spiked analytes are within laboratory control limits. A LC sample was processed during the laboratory analysis of TOC. The LC recovery is within the method-specified laboratory control limit.

Other

The Pace laboratory report states that, "in some cases, small amounts of congeners 15 and 44 eluted outside of the acquisition window. This resulted in slightly reduced concentrations for these congeners. However, these congeners represented a very small contribution to the overall PCB level determined." Accordingly, the data are not qualified further.

For analysis of PCB Aroclors WPCL reports the following

- Reporting limits were raised in samples FO105875, FO105876, FO105877, and FO105879 due to high levels of target analytes. Samples FO105876, FO105877, and FO105879 required dilution to resolve target analytes.
- The laboratory reports on the sample chromatograms that Aroclor 1254 may be present in sample FO105874 and FO105875.
- In sample FO105876, quantification of Aroclor 1016/1242 is based on only 2 chromotagraphic peaks due to matrix interferences, and total PCB Aroclor results should be considered estimates.
- In sample FO105877, quantification of Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interference, and overlapping components in the Aroclors may have affected the precision of quantifications.
- In sample FO105878, overlapping components in the Aroclors may have affected the precision of quantifications.
- In sample FO105879, quantification of Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interferences. Additionally, some Aroclor 1260 may be present in the sample.

Affected values are labeled EST in the WPCL report.

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
(503) 823-5696

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 9/8/10
Page: 1 of 1
Collected By: ASA, PTB

Project Name: PORTLAND HARBOR INLINE SAMP
File Number: 1020.001 **Matrix:** SEDIMENT

Basin 52C & 53 Inline

Requested Analyses

WPCL Sample I.D.	Location	Point Code	Sample Date	Sample Time	Sample Type	Organics: PCB Aroclors - LL	Organics: PCB Congeners (All 209)	Organics: TOC	Organics	Organics	Organics	General: Total Solids	General	General	Metals	Field Comments
FO105874	IL-52C-BURGARD1-0910 N SEVER & BURGARD	52C_1	9/7/10	1404	C	●	●	●				●				
FO105875	IL-52C-BURGARD2-0910 LOMBARD AT SCHNITZER	52C_2	9/7/10	1452	C	●	●	●				●				
FO105876	IL-52C-LOMARD1-0910 CATCH BASIN COMP1	52C_3	9/7/10	1539	C	●	●	●				●				
FO105877	IL-CS54-LOMBARD2-0910 CATCH BASIN COMP2	CS54_1	9/8/10	1122	C	●	●	●				●				
FO105878	IL-53-LOMBARD3-0910 CATCH BASIN COMP3	53_1	9/8/10	1235	C	●	●	●				●				
FO105879	DUPLICATE	DUP	9/7/10		C	●	●	●				●				

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.	Relinquished By: 4.
Signature: [signature] Time: 1633	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Andrew Arnsberg Date: 9/8/10	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Received By: 1.	**Received By:** 2.	**Received By:** 3.	**Received By:** 4.
Signature: [signature] Time: 1633	Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Mackenzie Zirk Date: 9/8/10	Printed Name: Date:	Printed Name: Date:	Printed Name: Date:

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO105874 **Sample Collected:** 09/07/10 14:04 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-52C-BURGARD1-0910
SURFACE SOILS FROM NW SEVER X BURGARD
Sample Point Code: 52C_1
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AO08003
EID File # : 1020:001
LocCode: PORTHARI
Collected By: AJA/PTB

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	74.8	% W/W	0.01	SM 2540 G	09/11/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	09/10/10
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1248	91	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1254	<10	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1260	64	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	09/10/10
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	09/10/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	56200	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	10/06/10

End of Report for Sample ID: FO105874

Report Date: 10/18/10 **Validated By:**

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO105875 **Sample Collected:** 09/07/10 14:52 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 1
Address/Location:	IL-52C-BURGARD2-0910 SURFACE SOILS FROM SCHNITZER X N LOMBARD	**System ID:**	AO08004
Sample Point Code:	52C_2	**EID File # :**	1020.001
Sample Type:	COMPOSITE	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	AJA/PTB

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. LAB: For PCB analysis, some Aroclor 1254 may be present in addition to the 1248 and 1260 reported. Reporting limits are raised for PCB due to the high concentration of target analytes.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	89.5	% W/W	0.01	SM 2540 G	09/11/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<40	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1221	<80	µg/Kg dry wt	80	EPA 8082	09/10/10
Aroclor 1232	<40	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1248	254	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1254	<40	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1260	398	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1262	<40	µg/Kg dry wt	40	EPA 8082	09/10/10
Aroclor 1268	<40	µg/Kg dry wt	40	EPA 8082	09/10/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	32900	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	09/29/10

End of Report for Sample ID: FO105875

Report Date: 10/18/10 **Validated By:**

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO105876 **Sample Collected:** 09/07/10 15:39 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 1
Address/Location:	IL-52C-LOMBARD1-0910 CATCH BASIN SOIL COMP1	**System ID:**	AO08005
Sample Point Code:	52C_3	**EID File # :**	1020.001
Sample Type:	COMPOSITE	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	AJA/PTB

Comments:
QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. PCB matrix spike results indicate non-homogeneous matrix; PCB results should be considered estimates. Additionally, quantification of Aroclor 1016/1242 is based on only 2 chromatographic peaks due to matrix interferences. LAB: For PCB analysis, dilution was required due to high levels of target analytes, resulting in raised reporting limits.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	63.5	% W/W	0.01	SM 2540 G	09/17/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	EST 157	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1221	<80	µg/Kg dry wt	80	EPA 8082	09/16/10
Aroclor 1232	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1248	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1254	440	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1260	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1262	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1268	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	63600	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	10/06/10

End of Report for Sample ID: FO105876

Report Date: 10/18/10 **Validated By:**

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO105877 **Sample Collected:** 09/08/10 11:22 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: IL-CS54-LOMBARD2-0910 CATCH BASIN SOIL COMP2
Sample Point Code: CS54_1
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

Report Page: Page 1 of 1
System ID: AO08006
EID File # : 1020.001
LocCode: PORTHARI
Collected By: AJA/PTB

Comments:
QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Quantification of PCB Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interferences, and overlapping components in the Aroclors may have affected precision of quantifications. LAB: For PCB analysis, dilution was required due to high levels of target analytes, resulting in raised reporting limits.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	69.4	% W/W	0.01	SM 2540 G	09/17/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1221	<40	µg/Kg dry wt	40	EPA 8082	09/16/10
Aroclor 1232	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1248	EST 253	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1254	268	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1260	120	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1262	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1268	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	73300	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	10/06/10

End of Report for Sample ID: FO105877

Report Date: 10/18/10 **Validated By:**

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: **FO105878** **Sample Collected:** 09/08/10 12:35 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name:	PORTLAND HARBOR INLINE SAMP	**Report Page:**	Page 1 of 1
Address/Location:	IL-53-LOMBARD3-0910 CATCH BASIN SOIL COMP3	**System ID:**	AO08007
Sample Point Code:	53_1	**EID File # :**	1020.001
Sample Type:	COMPOSITE	**LocCode:**	PORTHARI
Sample Matrix:	SEDIMENT	**Collected By:**	AJA/PTB

Comments:
QA/QC: Unless otherwise noted, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. For PCB analysis, overlapping components in the Aroclors may have affected precision of quantifications.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	51.8	% W/W	0.01	SM 2540 G	09/17/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1221	<20	µg/Kg dry wt	20	EPA 8082	09/16/10
Aroclor 1232	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1248	118	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1254	81	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1260	47	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1262	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
Aroclor 1268	<10	µg/Kg dry wt	10	EPA 8082	09/16/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	127000	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	10/06/10

End of Report for Sample ID: FO105878

Report Date: 10/18/10 **Validated By:**

City of Portland
Water Pollution Control Laboratory

6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Sample ID: FO105879 **Sample Collected:** 09/07/10 00:00 **Sample Received:** 09/08/10 **Sample Status:** COMPLETE AND VALIDATED

Proj./Company Name: PORTLAND HARBOR INLINE SAMP
Address/Location: FIELD DUPLICATE

Report Page: Page 1 of 1

Sample Point Code: DUP
Sample Type: COMPOSITE
Sample Matrix: SEDIMENT

System ID: AO08008
EID File # : 1020.001
LocCode: PORTHARI
Collected By: AJA/PTB

Comments:
QA/QC: Except as follows, all analytical QA/QC criteria were met for this sample including holding times, calibration, method blanks, laboratory control sample recoveries, duplicate precision, matrix spike recoveries, and surrogate recoveries, as applicable. Quantification of PCB Aroclor 1248 is based on only 2 chromatographic peaks due to matrix interferences. LAB: For PCB analysis, dilution was required due to high levels of target analytes, resulting in raised reporting limits. In addition to the Aroclors reported, some Aroclor 1260 may be present in the sample.

Test Parameter	Result	Units	MRL	Method	Analysis Date
GENERAL					
TOTAL SOLIDS	65.7	% W/W	0.01	SM 2540 G	09/17/10
GC ANALYSIS					
POLYCHLORINATED BIPHENYLS (PCB)					
Aroclor 1016/1242	<100	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1221	<200	µg/Kg dry wt	200	EPA 8082	09/16/10
Aroclor 1232	<100	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1248	EST 549	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1254	587	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1260	<100	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1262	<100	µg/Kg dry wt	100	EPA 8082	09/16/10
Aroclor 1268	<100	µg/Kg dry wt	100	EPA 8082	09/16/10
OUTSIDE ANALYSIS					
TOTAL ORGANIC CARBON	57700	mg/Kg dry wt	100	EPA 9060 MOD	09/16/10
POLYCHLORINATED BIPHENYL CONGENERS -PACE					
Refer to Contract Report	Completed	ng/Kg dry wt		EPA 1668 MOD	10/06/10

End of Report for Sample ID: FO105879

Report Date: 10/18/10 **Validated By:**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

September 24, 2010

Jennifer Shackelford
City of Portland Water Pollution Laboratory
6543 N. Burlington Ave.
Portland, OR 97203

RE: Portland Harbor Inline

Enclosed are the results of analyses for samples received by the laboratory on 09/09/10 16:05. The following list is a summary of the Work Orders contained in this report, generated on 09/24/10 14:30.

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

Work Order	Project	ProjectNumber
PTI0293	Portland Harbor Inline	Basin 52C & 53

TestAmerica Portland

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor Inline**	
6543 N. Burlington Ave.	Project Number:	Basin 52C & 53	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	09/24/10 14:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FO105874	PTI0293-01	Soil	09/07/10 14:04	09/09/10 16:05
FO105875	PTI0293-02	Soil	09/07/10 14:52	09/09/10 16:05
FO105876	PTI0293-03	Soil	09/07/10 15:39	09/09/10 16:05
FO105877	PTI0293-04	Soil	09/08/10 11:22	09/09/10 16:05
FO105878	PTI0293-05	Soil	09/08/10 12:35	09/09/10 16:05
FO105879	PTI0293-06	Soil	09/07/10 00:00	09/09/10 16:05

TestAmerica Portland

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor Inline**	
6543 N. Burlington Ave.	Project Number:	Basin 52C & 53	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	09/24/10 14:30

Organic Carbon, Total (TOC)

TestAmerica Connecticut

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTI0293-01 (FO105874)			**Soil**			**Sampled: 09/07/10 14:04**				
Total Organic Carbon - Duplicates	9060	**56200**	*30.0*	100	mg/Kg	1x	42822	09/16/10 18:40	09/16/10 18:40	
PTI0293-02 (FO105875)			**Soil**			**Sampled: 09/07/10 14:52**				
Total Organic Carbon - Duplicates	9060	**32900**	*30.0*	100	mg/Kg	1x	42822	09/16/10 18:58	09/16/10 18:58	
PTI0293-03 (FO105876)			**Soil**			**Sampled: 09/07/10 15:39**				
Total Organic Carbon - Duplicates	9060	**63600**	*30.0*	100	mg/Kg	1x	42822	09/16/10 19:13	09/16/10 19:13	
PTI0293-04 (FO105877)			**Soil**			**Sampled: 09/08/10 11:22**				
Total Organic Carbon - Duplicates	9060	**73300**	*30.0*	100	mg/Kg	1x	42822	09/16/10 19:31	09/16/10 19:31	
PTI0293-05 (FO105878)			**Soil**			**Sampled: 09/08/10 12:35**				
Total Organic Carbon - Duplicates	9060	**127000**	*30.0*	100	mg/Kg	1x	42822	09/16/10 20:08	09/16/10 20:08	
PTI0293-06 (FO105879)			**Soil**			**Sampled: 09/07/10 00:00**				
Total Organic Carbon - Duplicates	9060	**57700**	*30.0*	100	mg/Kg	1x	42822	09/16/10 20:30	09/16/10 20:30	

TestAmerica Portland

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor Inline**	
6543 N. Burlington Ave.	Project Number:	Basin 52C & 53	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	09/24/10 14:30

Organic Carbon, Total (TOC) - Laboratory Quality Control Results

TestAmerica Connecticut

QC Batch: 42822 **Soil Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (220-42822-6)					**QC Source:**					**Extracted: 09/16/10 18:25**				
Total Organic Carbon - Duplicates	9060	5134	30.0	100	mg/Kg	1x	--	4110	125%	(28-172)	--	--	09/16/10 18:25	
Blank (220-42822-7)					**QC Source:**					**Extracted: 09/16/10 18:32**				
Total Organic Carbon - Duplicates	9060	ND	30.0	100	mg/Kg	1x	--	--	--	--	--	--	09/16/10 18:32	

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

City of Portland Water Pollution Laboratory	Project Name:	**Portland Harbor Inline**	
6543 N. Burlington Ave.	Project Number:	Basin 52C & 53	Report Created:
Portland, OR 97203	Project Manager:	Jennifer Shackelford	09/24/10 14:30

Notes and Definitions

Report Specific Notes:

None

Laboratory Reporting Conventions:

DET	-	Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
ND	-	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
NR/NA	-	Not Reported / Not Available
dry	-	Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
wet	-	Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
RPD	-	RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
MRL	-	METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
MDL*	-	METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
Dil	-	Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
Reporting Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Darrell Auvil, Project Manager

CERTIFICATION SUMMARY

Subcontracted Laboratories

Pace Analytical Services, Inc - Minneapolis

1700 Elm Street Suite 200 - Minneapolis, MN 55414

Analysis Performed: 1668 PCB 209 Congeners - SUB

Samples: PTI0293-01, PTI0293-02, PTI0293-03, PTI0293-04, PTI0293-05, PTI0293-06

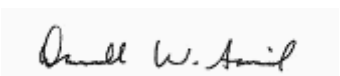
TestAmerica Connecticut

128 Long Hill Cross Road - Shelton, CT 06484

Method Performed: 9060

Samples: PTI0293-01, PTI0293-02, PTI0293-03, PTI0293-04, PTI0293-05, PTI0293-06

TestAmerica Portland



Darrell Auvil, Project Manager

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PT10293

CLIENT: City of Portland

REPORT TO: Jennifer Shackelford

ADDRESS:

PHONE: FAX:

INVOICE TO: Charles Lytle

P.O. NUMBER: 86238

PROJECT NAME: Portland Harbor Inline

PROJECT NUMBER: Basin 52C & 53

SAMPLED BY:

TURNAROUND REQUEST

in Business Days *

Organic & Inorganic Analyses: ~~10~~ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME		PRESERVATIVE: HNU 200	REQUESTED ANALYSES: * PCB Congeners	TOC	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	F0105874	9/7/10	1404		X	X	S	2		
2	F0105875	9/7/10	1452							
3	F0105876	9/7/10	1539							
4	F0105877	9/8/10	1122							
5	F0105878	9/8/10	1235							
6	F0105879	9/7/10	—							
7										
8										
9										
10										

RELEASED BY: Mackenzie Zirk — PRINT NAME: Mackenzie Zirk — FIRM: City of Portland — DATE: 9/9/10 — TIME: 1350

RECEIVED BY: — PRINT NAME: Bob E — FIRM: TAP — DATE: 9/9/10 — TIME: 13:50

RELEASED BY: — PRINT NAME: Bob E — FIRM: TAP — DATE: 9/9/10 — TIME: 16:05

RECEIVED BY: — PRINT NAME: — FIRM: TAP — DATE: 9/9/10 — TIME: 1605

ADDITIONAL REMARKS: * Send to PACE

TEMP: 0.9

PAGE OF

TAL-1000(0408)

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PT10293 Date/Time Received: 9/9/10 1605

Client Name and Project: City of Portland

Time Zone:
☐EDT/EST ☐CDT/CST ☐MDT/MST ☑PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures: 0.9

Digi #1 ☐ Digi #2 ☐ IR Gun ☑ (☑Plastic ☐Glass)

Temperature out of Range:

__Not enough or No Ice
__Ice Melted
__W/in 4 Hrs of collection
__Other:

Initials: JM

N/A	Yes	No	
☑	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☑	☐	☐	2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.
	☑	☐	3. Chain of Custody present? If no, document on NOD.
	☑	☐	4. Bottles received intact? If no, document on NOD.
	☑	☐	5. Sample is not multiphasic? If no, document on NOD.
	☑	☐	6. Proper Container and preservatives used? If no, document on NOD.
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☑	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☑	☐	☐	9. HF Dilution required?
	☑	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☑	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☐	☑	12. Is the "Sampled by" section of the COC completed?
☑	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☑	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☑	15. Did samples require preservation with sodium thiosulfate?
☑	☐	☐	16. If yes to #15, was the residual chlorine test negative? If no, document on NOD.
☑	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☑	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☑	☐	☐	19. Are analyses with short holding times received in hold?
	☑	☐	20. Was Standard Turn Around (TAT) requested?
	☑	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PT10293

Login Checks:

Initials:

N/A	Yes	No	
	☑	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☑	☐	☐	23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM.
	☑	☐	24. Did the chain of custody include "received by" and "relinquished by" signatures, dates and times?
☐	☑	☐	25. Were special log in instructions read and followed?
	☑	☐	26. Were tests logged checked against the COC?
☑	☐	☐	27. Were rush notices printed and delivered?
☑	☐	☐	28. Were short hold notices printed and delivered?
☐	☑	☐	29. Were subcontract COCs printed?
☑	☐	☐	30. Was HF dilution logged?

Labeling and Storage Checks:

Initials:

N/A	Yes	No	
☐	☑	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☑	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☑	☐	33. Did the sample ID, Date, and Time from label match what was logged?
☑	☐	☐	34. Were Foreign sample stickers affixed to each container and containers stored in foreign fridge?
☑	☐	☐	35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
☑	☐	☐	36. Was an NOD for created for noted discrepancies and placed in folder?

Document any problems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy form (NOD).

Pace Analytical™

www.pacelabs.com

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

Report Prepared for:

Darrell Auvil
Test America
9405 SW Nimbus Avenue
Beaverton OR 97008

REPORT OF LABORATORY ANALYSIS FOR PCBs

Report Information:

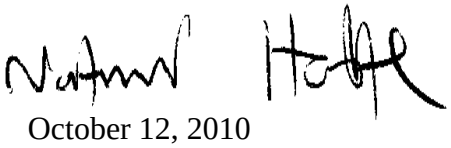
Pace Project #: 10138001
Sample Receipt Date: 09/14/2010
Client Project #: Portland Harb InlineBas
Client Sub PO #: N/A
State Cert #: MN200001-005

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 Nate Habte, your Pace Project Manager.

This report has been reviewed by:



October 12, 2010

Nate Habte, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
natnael.habte@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

Report Prepared Date:
October 12, 2010

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 Test America - Portland. The samples were analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to approximately 25-75 parts per trillion and were adjusted for the amount of dry sample extracted.

The isotopically-labeled PCB internal standards in the sample extracts were recovered at 42-135%. With three exceptions, flagged "R" on the QC results tables, the labeled internal standard recoveries obtained for the sample extracts were within the target ranges specified in the method. Since the quantification of the native PCB congeners was based on internal standard and isotope dilution methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determination of PCB congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained. Also, in some cases, small amounts of congeners 15 and 144 eluted outside of the acquisition window. This resulted in slightly reduced concentrations for these congeners. However, these congeners represented a very small contribution to the overall PCB level determined.

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 be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the levels determined for the field samples.

Laboratory spike samples were also prepared with each sample batch using a reference matrix that had been fortified with native standards. The results show that the spiked native compounds were recovered at 88-136% with relative percent differences of 0.0-13.2%. These results indicate high levels of accuracy and precision for these analyses. Matrix spikes were not prepared with the samples.

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

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

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN000642010A
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (DNR)	959	Oklahoma	D9922
Guam	09-019r	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN200001-005
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	LA0900016	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

1136

10138001

SUBCONTRACT ORDER
TestAmerica Portland

PTI0293

SENDING LABORATORY:

TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Phone: (503) 906-9200
Fax: (503) 906-9210
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Pace Analytical Services, Inc - Minneapolis
1700 Elm Street Suite 200
Minneapolis, MN 55414
Phone :(612) 607-1700
Fax: (612) 607-6444
Project Location: OR - OREGON
Receipt Temperature:_____°C Ice: Y / N

needs Excel EDD

Standard TAT is requested unless specific due date is requested. => Due Date: 3weeks **Initials:** JM

Analysis	Units	Expires	Comments
Sample ID: PTI0293-01 (FO105874 - Soil)		Sampled: **09/07/10 14:04**	10138001001
1668 Coplanar PCBs - SUB	ug/l	03/06/11 14:04	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			
Sample ID: PTI0293-02 (FO105875 - Soil)		Sampled: **09/07/10 14:52**	002
1668 Coplanar PCBs - SUB	ug/l	03/06/11 14:52	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			
Sample ID: PTI0293-03 (FO105876 - Soil)		Sampled: **09/07/10 15:39**	003
1668 Coplanar PCBs - SUB	ug/l	03/06/11 15:39	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			
Sample ID: PTI0293-04 (FO105877 - Soil)		Sampled: **09/08/10 11:22**	004
1668 Coplanar PCBs - SUB	ug/l	03/07/11 11:22	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			
Sample ID: PTI0293-05 (FO105878 - Soil)		Sampled: **09/08/10 12:35**	005
1668 Coplanar PCBs - SUB	ug/l	03/07/11 12:35	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			
Sample ID: PTI0293-06 (FO105879 - Soil)		Sampled: **09/07/10 00:00**	006
1668 Coplanar PCBs - SUB	ug/l	03/06/11 00:00	***209 Congeners*** to Pace
Containers Supplied:			
4 oz. jar Amber (A)			

Jessica Mjx 9/13/10
Released By Date/Time

Mark Ray / PaceMN 9/14/10 0005 T=4.4°
Received By Date/Time

Released By Date/Time

Received By Date/Time

Sample Condition Upon Receipt

Pace Analytical

Client Name: Test America **Project #** 10138001

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

Tracking #: 417075261642

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no **Seals intact:** ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ **Temp Blank:** Yes ✓ No _____

Thermometer Used 80344042 or 179425 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.4 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and initials of person examining contents: 9/14/10 1158

Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Darrell Auvil Date/Time: 9/10/10 @ 11:30

Comments/ Resolution:

- 1668-209, dispute note on COC
- Stan 4 wk TAT is Fine

Project Manager Review: NAH **Date:** 9/15/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

F-L213Rev.00, 05Aug2009

Pace Analytical Services, Inc.
1700 Elm Street SE, Suite 200, Minneapolis, MN 55414

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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

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

Appendix B

Sample Analysis Summary

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

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

Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-01 (FO105874)		
Lab Sample ID	10138001001		
Filename	P101008A_08		
Injected By	BAL		
Total Amount Extracted	13.7 g	Matrix	Solid
% Moisture	26.2	Dilution	5
Dry Weight Extracted	10.1 g	Collected	09/07/2010 14:04
ICAL ID	P101008A02	Received	09/14/2010 10:05
CCal Filename(s)	P101008A_01	Extracted	10/06/2010 16:40
Method Blank ID	BLANK-26574	Analyzed	10/08/2010 20:42

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.426	3.55	2.0	1.21	61
13C-4-MoCB	3	11.781	2.69	2.0	1.48	74
13C-2,2'-DiCB	4	12.104	1.62	2.0	1.31	66
13C-4,4'-DiCB	15	20.179	1.48	2.0	1.38	69
13C-2,2',6-TrCB	19	16.501	1.13	2.0	1.36	68
13C-3,4,4'-TrCB	37	28.444	1.08	2.0	1.64	82
13C-2,2',6,6'-TeCB	54	20.479	0.79	2.0	1.56	78
13C-3,4,4',5-TeCB	81	35.722	0.81	2.0	1.51	76
13C-3,3',4,4'-TeCB	77	36.325	0.81	2.0	1.53	77
13C-2,2',4,6,6'-PeCB	104	26.985	1.62	2.0	1.60	80
13C-2,3,3',4,4'-PeCB	105	39.897	1.61	2.0	1.16	58
13C-2,3,4,4',5-PeCB	114	39.243	1.62	2.0	1.31	65
13C-2,3',4,4',5-PeCB	118	38.706	1.62	2.0	1.31	65
13C-2,3',4,4',5'-PeCB	123	38.354	1.58	2.0	1.35	68
13C-3,3',4,4',5-PeCB	126	43.100	1.59	2.0	1.29	64
13C-2,2',4,4',6,6'-HxCB	155	33.223	1.24	2.0	1.84	92
13C-HxCB (156/157)	156/157	46.118	1.25	4.0	2.64	66
13C-2,3',4,4',5,5'-HxCB	167	44.961	1.29	2.0	1.39	70
13C-3,3',4,4',5,5'-HxCB	169	49.472	1.23	2.0	1.27	64
13C-2,2',3,4',5,6,6'-HpCB	188	39.159	1.04	2.0	2.09	105
13C-2,3,3',4,4',5,5'-HpCB	189	51.984	1.03	2.0	1.57	79
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.626	0.91	2.0	1.96	98
13C-2,3,3',4,4',5,5',6-OcCB	205	54.808	0.88	2.0	1.56	78
13C-2,2',3,3',4,4',5,5',6-NoCB	206	56.964	0.86	2.0	1.67	84
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.381	0.83	2.0	1.58	79
13C--DeCB	209	59.313	0.70	2.0	1.43	72
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.849	1.11	2.0	1.67	83
13C-2,3,3',5,5'-PeCB	111	36.342	1.65	2.0	1.47	74
13C-2,2',3,3',5,5',6-HpCB	178	42.295	1.04	2.0	1.67	83
Recovery Standards						
13C-2,5-DiCB	9	14.979	1.57	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.979	0.78	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	33.491	1.59	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.859	1.31	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.226	0.88	2.0	NA	NA

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

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

Pace Analytical Services, Inc.
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 PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.450	2.97	112	---	24.7
2		11.517	3.17	53.9	---	24.7
3		11.804	3.02	105	---	24.7
4		12.128	1.59	697	---	24.7
5		15.950	1.36	41.3	---	24.7
6		15.578	1.54	409	---	24.7
7		15.231	1.55	74.5	---	24.7
8		16.154	1.57	2040	---	24.7
9		15.003	1.48	124	---	24.7
10		12.368	1.45	48.1	---	24.7
11		19.424	1.55	1080	---	148
12	12/13	19.784	1.54	381	---	49.5
13	12/13	19.784	1.54	(381)	---	49.5
14		---	---	ND	---	24.7
15		20.167	1.54	2690	---	24.7
16		20.083	1.05	1640	---	24.7
17		19.520	1.04	1500	---	24.7
18	18/30	19.005	1.04	2900	---	49.5
19		16.537	1.05	455	---	24.7
20	20/28	23.883	1.04	8170	---	49.5
21	21/33	24.134	1.04	3790	---	49.5
22		24.604	1.03	3270	---	24.7
23		---	---	ND	---	24.7
24		---	---	ND	---	24.7
25		23.145	0.99	525	---	24.7
26	26/29	22.860	1.05	1250	---	49.5
27		19.796	1.03	380	---	24.7
28	20/28	23.883	1.04	(8170)	---	49.5
29	26/29	22.860	1.05	(1250)	---	49.5
30	18/30	19.005	1.04	(2900)	---	49.5
31		23.530	1.03	6370	---	24.7
32		20.764	1.04	1530	---	24.7
33	21/33	24.134	1.04	(3790)	---	49.5
34		---	---	ND	---	24.7
35		28.008	1.06	258	---	24.7
36		---	---	ND	---	24.7
37		28.477	1.04	4240	---	24.7
38		---	---	ND	---	24.7
39		26.867	1.02	45.0	---	24.7
40	40/41/71	28.242	0.79	5810	---	148
41	40/41/71	28.242	0.79	(5810)	---	148
42		27.689	0.79	2760	---	49.5
43	43/73	26.247	0.83	213	---	99.0
44	44/47/65	27.102	0.79	9870	---	148
45	45/51	23.933	0.78	1660	---	99.0
46		24.285	0.81	633	---	49.5
47	44/47/65	27.102	0.79	(9870)	---	148
48		26.851	0.81	1640	---	49.5

Conc = Concentration
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Nn = Value obtained from additional analyses

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* = See Discussion
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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	26.549	0.79	5130	---	99.0
50	50/53	23.162	0.77	1140	---	99.0
51	45/51	23.933	0.78	(1660)	---	99.0
52		25.995	0.79	11800	---	49.5
53	50/53	23.162	0.77	(1140)	---	99.0
54		---	---	ND	---	49.5
55		---	---	ND	---	49.5
56		32.368	0.77	3440	---	49.5
57		---	---	ND	---	49.5
58		---	---	ND	---	49.5
59	59/62/75	27.471	0.80	957	---	148
60		32.602	0.77	1740	---	49.5
61	61/70/74/76	31.328	0.77	13600	---	198
62	59/62/75	27.471	0.80	(957)	---	148
63		30.942	0.76	287	---	49.5
64		28.494	0.78	4240	---	49.5
65	44/47/65	27.102	0.79	(9870)	---	148
66		31.680	0.77	7390	---	49.5
67		30.674	0.73	241	---	49.5
68		---	---	ND	---	49.5
69	49/69	26.549	0.79	(5130)	---	99.0
70	61/70/74/76	31.328	0.77	(13600)	---	198
71	40/41/71	28.242	0.79	(5810)	---	148
72		29.450	0.81	54.3	---	49.5
73	43/73	26.247	0.83	(213)	---	99.0
74	61/70/74/76	31.328	0.77	(13600)	---	198
75	59/62/75	27.471	0.80	(957)	---	148
76	61/70/74/76	31.328	0.77	(13600)	---	198
77		36.325	0.78	1260	---	49.5
78		---	---	ND	---	49.5
79		34.632	0.68	101	---	49.5
80		---	---	ND	---	49.5
81		35.738	0.71	57.9	---	49.5
82		35.906	1.59	2380	---	49.5
83		33.994	1.55	1270	---	49.5
84		31.496	1.57	4830	---	49.5
85	85/116/117	35.403	1.54	2800	---	148
86	86/87/97/108/119/125	34.732	1.56	12700	---	297
87	86/87/97/108/119/125	34.732	1.56	(12700)	---	297
88	88/91	31.261	1.56	2280	---	99.0
89		32.016	1.57	210	---	49.5
90	90/101/113	33.508	1.57	16700	---	148
91	88/91	31.261	1.56	(2280)	---	99.0
92		32.888	1.57	3030	---	49.5
93	93/98/100/102	30.708	1.52	546	---	198
94		29.852	1.64	79.7	---	49.5
95		30.339	1.56	14100	---	49.5
96		27.421	1.52	130	---	49.5

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X = Outside QC Limits
RT = Retention Time
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	34.732	1.56	(12700)	---	297
98	93/98/100/102	30.708	1.52	(546)	---	198
99		34.128	1.58	6120	---	49.5
100	93/98/100/102	30.708	1.52	(546)	---	198
101	90/101/113	33.508	1.57	(16700)	---	148
102	93/98/100/102	30.708	1.52	(546)	---	198
103		29.618	1.46	78.2	---	49.5
104		---	---	ND	---	49.5
105		39.914	1.56	7480	---	49.5
106		---	---	ND	---	49.5
107	107/124	38.019	1.52	728	---	99.0
108	86/87/97/108/119/125	34.732	1.56	(12700)	---	297
109		38.270	1.56	996	---	49.5
110	110/115	35.587	1.58	21400	---	99.0
111		---	---	ND	---	49.5
112		---	---	ND	---	49.5
113	90/101/113	33.508	1.57	(16700)	---	148
114		39.260	1.61	414	---	49.5
115	110/115	35.587	1.58	(21400)	---	99.0
116	85/116/117	35.403	1.54	(2800)	---	148
117	85/116/117	35.403	1.54	(2800)	---	148
118		38.723	1.55	16800	---	49.5
119	86/87/97/108/119/125	34.732	1.56	(12700)	---	297
120		---	---	ND	---	49.5
121		---	---	ND	---	49.5
122		39.058	1.47	236	---	49.5
123		38.371	1.60	381	---	49.5
124	107/124	38.019	1.52	(728)	---	99.0
125	86/87/97/108/119/125	34.732	1.56	(12700)	---	297
126		43.150	1.45	280	---	49.5
127		---	---	ND	---	49.5
128	128/166	43.167	1.23	3690	---	99.0
129	129/138/163	41.892	1.24	23200	---	148
130		41.238	1.25	1540	---	49.5
131		38.304	1.30	383	---	49.5
132		38.790	1.24	7420	---	49.5
133		39.327	1.24	254	---	49.5
134	134/143	37.700	1.26	1060	---	99.0
135	135/151	36.543	1.27	6190	---	99.0
136		33.994	1.27	2470	---	49.5
137		41.440	1.23	1050	---	49.5
138	129/138/163	41.892	1.24	(23200)	---	148
139	139/140	38.103	1.18	380	---	99.0
140	139/140	38.103	1.18	(380)	---	99.0
141		40.819	1.26	3720	---	49.5
142		---	---	ND	---	49.5
143	134/143	37.700	1.26	(1060)	---	99.0
144		37.113	1.27	745	---	49.5

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	49.5
146		39.997	1.26	2450	---	49.5
147	147/149	37.482	1.25	15100	---	99.0
148		---	---	ND	---	49.5
149	147/149	37.482	1.25	(15100)	---	99.0
150		---	---	ND	---	49.5
151	135/151	36.543	1.27	(6190)	---	99.0
152		---	---	ND	---	49.5
153	153/168	40.618	1.25	16500	---	99.0
154		36.795	1.25	139	---	49.5
155		---	---	ND	---	49.5
156	156/157	46.118	1.25	3050	---	99.0
157	156/157	46.118	1.25	(3050)	---	99.0
158		42.295	1.25	2280	---	49.5
159		---	---	ND	---	49.5
160		---	---	ND	---	49.5
161		---	---	ND	---	49.5
162		44.542	1.23	168	---	49.5
163	129/138/163	41.892	1.24	(23200)	---	148
164		41.574	1.24	1510	---	49.5
165		---	---	ND	---	49.5
166	128/166	43.167	1.23	(3690)	---	99.0
167		44.978	1.24	948	---	49.5
168	153/168	40.618	1.25	(16500)	---	99.0
169		---	---	ND	---	49.5
170		48.784	1.05	4340	---	49.5
171	171/173	45.179	1.05	1360	---	99.0
172		46.856	1.03	824	---	49.5
173	171/173	45.179	1.05	(1360)	---	99.0
174		44.089	1.03	4060	---	49.5
175		42.966	1.05	202	---	49.5
176		40.417	1.05	613	---	49.5
177		44.559	1.04	2680	---	49.5
178		42.312	1.03	980	---	49.5
179		39.528	1.06	2020	---	49.5
180	180/193	47.510	1.03	9530	---	99.0
181		---	---	ND	---	49.5
182		---	---	ND	---	49.5
183	183/185	43.854	1.03	3200	---	99.0
184		---	---	ND	---	49.5
185	183/185	43.854	1.03	(3200)	---	99.0
186		---	---	ND	---	49.5
187		43.234	1.06	5310	---	49.5
188		---	---	ND	---	49.5
189		52.006	1.08	197	---	49.5
190		49.338	1.05	862	---	49.5
191		47.879	1.06	175	---	49.5
192		---	---	ND	---	49.5

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.510	1.03	(9530)	---	99.0
194		54.248	0.91	2210	---	74.2
195		51.704	0.91	840	---	74.2
196		50.143	0.88	1230	---	74.2
197	197/200	46.621	0.90	323	---	148
198	198/199	49.472	0.91	2830	---	148
199	198/199	49.472	0.91	(2830)	---	148
200	197/200	46.621	0.90	(323)	---	148
201		45.582	0.92	358	---	74.2
202		44.642	0.91	550	---	74.2
203		50.361	0.88	1660	---	74.2
204		---	---	ND	---	74.2
205		54.830	0.88	129	---	74.2
206		57.028	0.77	1410	---	74.2
207		52.372	0.74	182	---	74.2
208		51.424	0.75	335	---	74.2
209		59.313	0.72	540	---	74.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-01 (FO105874)
Lab Sample ID 10138001001
Filename P101008A_08

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	271
Total Dichloro Biphenyls	7580
Total Trichloro Biphenyls	36300
Total Tetrachloro Biphenyls	74000
Total Pentachloro Biphenyls	116000
Total Hexachloro Biphenyls	94200
Total Heptachloro Biphenyls	36400
Total Octachloro Biphenyls	10100
Total Nonachloro Biphenyls	1930
Decachloro Biphenyls	540
Total PCBs	377000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-02 (FO105875)		
Lab Sample ID	10138001002		
Filename	P101001A_05		
Injected By	BAL		
Total Amount Extracted	11.8 g	Matrix	Solid
% Moisture	10.1	Dilution	5
Dry Weight Extracted	10.7 g	Collected	09/07/2010 14:52
ICAL ID	P101001A02	Received	09/14/2010 10:05
CCal Filename(s)	P101001A_01	Extracted	09/29/2010 14:40
Method Blank ID	BLANK-26482	Analyzed	10/01/2010 07:40

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.085	3.44	2.0	1.10	55
13C-4-MoCB	3	12.511	2.76	2.0	1.34	67
13C-2,2'-DiCB	4	12.871	1.60	2.0	1.34	67
13C-4,4'-DiCB	15	21.055	1.57	2.0	1.23	61
13C-2,2',6-TrCB	19	17.316	1.11	2.0	1.33	67
13C-3,4,4'-TrCB	37	29.411	1.12	2.0	1.35	67
13C-2,2',6,6'-TeCB	54	21.362	0.83	2.0	1.43	72
13C-3,4,4',5-TeCB	81	36.722	0.80	2.0	1.22	61
13C-3,3',4,4'-TeCB	77	37.309	0.81	2.0	1.25	62
13C-2,2',4,6,6'-PeCB	104	27.919	1.56	2.0	1.48	74
13C-2,3,3',4,4'-PeCB	105	40.915	1.61	2.0	1.02	51
13C-2,3,4,4',5-PeCB	114	40.244	1.61	2.0	1.06	53
13C-2,3',4,4',5-PeCB	118	39.691	1.58	2.0	0.958	48
13C-2,3',4,4',5'-PeCB	123	39.372	1.56	2.0	1.07	53
13C-3,3',4,4',5-PeCB	126	44.117	1.56	2.0	0.850	42
13C-2,2',4,4',6,6'-HxCB	155	34.140	1.24	2.0	2.29	115
13C-HxCB (156/157)	156/157	47.136	1.22	4.0	2.02	50
13C-2,3',4,4',5,5'-HxCB	167	45.962	1.23	2.0	1.15	57
13C-3,3',4,4',5,5'-HxCB	169	50.540	1.25	2.0	0.910	46
13C-2,2',3,4',5,6,6'-HpCB	188	40.143	1.02	2.0	2.69	135
13C-2,3,3',4,4',5,5'-HpCB	189	53.094	1.08	2.0	1.31	65
13C-2,2',3,3',5,5',6,6'-OcCB	202	45.610	0.88	2.0	1.92	96
13C-2,3,3',4,4',5,5',6-OcCB	205	56.090	0.91	2.0	1.50	75
13C-2,2',3,3',4,4',5,5',6-NoCB	206	58.461	0.78	2.0	1.68	84
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	52.447	0.78	2.0	1.33	67
13C--DeCB	209	60.961	0.69	2.0	1.48	74
Cleanup Standards						
13C-2,4,4'-TrCB	28	24.749	1.13	2.0	1.89	94
13C-2,3,3',5,5'-PeCB	111	37.293	1.58	2.0	1.72	86
13C-2,2',3,3',5,5',6-HpCB	178	43.296	1.05	2.0	2.10	105
Recovery Standards						
13C-2,5-DiCB	9	15.782	1.56	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	26.879	0.80	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	34.459	1.56	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	42.860	1.28	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	55.465	0.90	2.0	NA	NA

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-02 (FO105875)
Lab Sample ID 10138001002
Filename P101001A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		9.097	3.14	2260	---	23.5
2		12.260	3.09	170	---	23.5
3		12.535	3.06	492	---	23.5
4		12.883	1.57	2370	---	23.5
5		16.789	1.45	189	---	23.5
6		16.370	1.49	1750	---	23.5
7		16.034	1.33	307	---	23.5
8		16.969	1.53	8290	---	23.5
9		15.794	1.39	490	---	23.5
10		13.146	1.41	178	---	23.5
11		20.276	1.47	583	---	141
12	12/13	20.648	1.48	1080	---	46.9
13	12/13	20.648	1.48	(1080)	---	46.9
14		---	---	ND	---	23.5
15		21.079	1.54	9430	---	23.5
16		20.959	1.05	7050	---	23.5
17		20.384	1.05	6220	---	23.5
18	18/30	19.857	1.04	12900	---	46.9
19		17.352	1.04	1640	---	23.5
20	20/28	24.783	1.04	30300	---	46.9
21	21/33	25.051	1.05	16900	---	46.9
22		25.521	1.03	12100	---	23.5
23		23.391	1.01	33.3	---	23.5
24		20.792	1.06	267	---	23.5
25		24.062	1.04	2020	---	23.5
26	26/29	23.777	1.03	4780	---	46.9
27		20.660	1.02	1370	---	23.5
28	20/28	24.783	1.04	(30300)	---	46.9
29	26/29	23.777	1.03	(4780)	---	46.9
30	18/30	19.857	1.04	(12900)	---	46.9
31		24.431	1.05	24400	---	23.5
32		21.647	1.04	5760	---	23.5
33	21/33	25.051	1.05	(16900)	---	46.9
34		23.207	1.04	79.9	---	23.5
35		28.958	1.02	694	---	23.5
36		---	---	ND	---	23.5
37		29.411	1.03	10600	---	23.5
38		28.388	1.05	41.8	---	23.5
39		27.768	0.94	168	---	23.5
40	40/41/71	29.176	0.78	17100	---	141
41	40/41/71	29.176	0.78	(17100)	---	141
42		28.623	0.78	7900	---	46.9
43	43/73	27.164	0.79	854	---	93.9
44	44/47/65	28.036	0.78	24900	---	141
45	45/51	24.850	0.78	5170	---	93.9
46		25.219	0.79	1870	---	46.9
47	44/47/65	28.036	0.78	(24900)	---	141
48		27.768	0.78	5510	---	46.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-02 (FO105875)
Lab Sample ID 10138001002
Filename P101001A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	27.466	0.78	13700	---	93.9
50	50/53	24.062	0.78	3340	---	93.9
51	45/51	24.850	0.78	(5170)	---	93.9
52		26.913	0.78	27700	---	46.9
53	50/53	24.062	0.78	(3340)	---	93.9
54		21.396	0.78	52.0	---	46.9
55		32.799	0.79	388	---	46.9
56		33.335	0.79	7000	---	46.9
57		31.155	0.77	126	---	46.9
58		31.424	0.77	74.8	---	46.9
59	59/62/75	28.405	0.78	2510	---	141
60		33.570	0.78	3850	---	46.9
61	61/70/74/76	32.279	0.78	29600	---	188
62	59/62/75	28.405	0.78	(2510)	---	141
63		31.910	0.79	771	---	46.9
64		29.428	0.78	12400	---	46.9
65	44/47/65	28.036	0.78	(24900)	---	141
66		32.631	0.79	15600	---	46.9
67		31.625	0.79	716	---	46.9
68		30.736	0.76	58.6	---	46.9
69	49/69	27.466	0.78	(13700)	---	93.9
70	61/70/74/76	32.279	0.78	(29600)	---	188
71	40/41/71	29.176	0.78	(17100)	---	141
72		30.401	0.78	121	---	46.9
73	43/73	27.164	0.79	(854)	---	93.9
74	61/70/74/76	32.279	0.78	(29600)	---	188
75	59/62/75	28.405	0.78	(2510)	---	141
76	61/70/74/76	32.279	0.78	(29600)	---	188
77		37.343	0.79	1590	---	46.9
78		---	---	ND	---	46.9
79		35.599	0.73	254	---	46.9
80		---	---	ND	---	46.9
81		36.723	0.78	85.4	---	46.9
82		36.890	1.55	4080	---	46.9
83		34.945	1.53	1830	---	46.9
84		32.463	1.55	9260	---	46.9
85	85/116/117	36.387	1.55	4680	---	141
86	86/87/97/108/119/125	35.716	1.56	22000	---	282
87	86/87/97/108/119/125	35.716	1.56	(22000)	---	282
88	88/91	32.228	1.56	4310	---	93.9
89		32.966	1.55	426	---	46.9
90	90/101/113	34.475	1.57	33500	---	141
91	88/91	32.228	1.56	(4310)	---	93.9
92		33.838	1.56	6460	---	46.9
93	93/98/100/102	31.675	1.53	1280	---	188
94		30.803	1.63	174	---	46.9
95		31.289	1.56	33900	---	46.9
96		28.371	1.59	293	---	46.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-02 (FO105875)
Lab Sample ID 10138001002
Filename P101001A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	35.716	1.56	(22000)	---	282
98	93/98/100/102	31.675	1.53	(1280)	---	188
99		35.096	1.56	11100	---	46.9
100	93/98/100/102	31.675	1.53	(1280)	---	188
101	90/101/113	34.475	1.57	(33500)	---	141
102	93/98/100/102	31.675	1.53	(1280)	---	188
103		30.568	1.59	155	---	46.9
104		---	---	ND	---	46.9
105		40.931	1.55	10400	---	46.9
106		---	---	ND	---	46.9
107	107/124	39.003	1.54	1070	---	93.9
108	86/87/97/108/119/125	35.716	1.56	(22000)	---	282
109		39.271	1.56	1780	---	46.9
110	110/115	36.555	1.57	39500	---	93.9
111		---	---	ND	---	46.9
112		---	---	ND	---	46.9
113	90/101/113	34.475	1.57	(33500)	---	141
114		40.278	1.55	618	---	46.9
115	110/115	36.555	1.57	(39500)	---	93.9
116	85/116/117	36.387	1.55	(4680)	---	141
117	85/116/117	36.387	1.55	(4680)	---	141
118		39.724	1.57	23500	---	46.9
119	86/87/97/108/119/125	35.716	1.56	(22000)	---	282
120		---	---	ND	---	46.9
121		---	---	ND	---	46.9
122		40.060	1.70	347	---	46.9
123		39.389	1.51	414	---	46.9
124	107/124	39.003	1.54	(1070)	---	93.9
125	86/87/97/108/119/125	35.716	1.56	(22000)	---	282
126		44.151	1.91 I	---	143	46.9
127		42.457	1.37	67.1	---	46.9
128	128/166	44.201	1.24	7430	---	93.9
129	129/138/163	42.893	1.25	77700	---	141
130		42.223	1.24	3470	---	46.9
131		39.305	1.24	851	---	46.9
132		39.791	1.25	23700	---	46.9
133		40.311	1.27	948	---	46.9
134	134/143	38.685	1.26	3790	---	93.9
135	135/151	37.511	1.26	42100	---	93.9
136		34.962	1.24	14100	---	46.9
137		42.424	1.25	1360	---	46.9
138	129/138/163	42.893	1.25	(77700)	---	141
139	139/140	39.087	1.22	684	---	93.9
140	139/140	39.087	1.22	(684)	---	93.9
141		41.803	1.26	20900	---	46.9
142		---	---	ND	---	46.9
143	134/143	38.685	1.26	(3790)	---	93.9
144		38.098	1.25	6110	---	46.9

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-02 (FO105875)
Lab Sample ID 10138001002
Filename P101001A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	46.9
146		40.965	1.25	11900	---	46.9
147	147/149	38.467	1.25	83200	---	93.9
148		---	---	ND	---	46.9
149	147/149	38.467	1.25	(83200)	---	93.9
150		34.576	1.27	50.6	---	46.9
151	135/151	37.511	1.26	(42100)	---	93.9
152		---	---	ND	---	46.9
153	153/168	41.602	1.25	76200	---	93.9
154		37.746	1.32	297	---	46.9
155		---	---	ND	---	46.9
156	156/157	47.153	1.26	6010	---	93.9
157	156/157	47.153	1.26	(6010)	---	93.9
158		43.296	1.25	7080	---	46.9
159		45.191	0.82 I	---	173	46.9
160		---	---	ND	---	46.9
161		---	---	ND	---	46.9
162		45.459	0.73 I	---	89.4	46.9
163	129/138/163	42.893	1.25	(77700)	---	141
164		42.575	1.25	5180	---	46.9
165		---	---	ND	---	46.9
166	128/166	44.201	1.24	(7430)	---	93.9
167		45.996	1.26	1890	---	46.9
168	153/168	41.602	1.25	(76200)	---	93.9
169		50.540	1.22	199	---	46.9
170		49.836	1.04	21400	---	46.9
171	171/173	46.197	1.01	8110	---	93.9
172		47.874	1.04	3580	---	46.9
173	171/173	46.197	1.01	(8110)	---	93.9
174		45.107	1.05	31800	---	46.9
175		43.967	1.03	1470	---	46.9
176		41.418	1.05	5050	---	46.9
177		45.560	1.05	17600	---	46.9
178		43.313	1.03	7370	---	46.9
179		40.529	1.05	16900	---	46.9
180	180/193	48.545	1.05	58400	---	93.9
181		45.962	1.00	79.3	---	46.9
182		---	---	ND	---	46.9
183	183/185	44.872	1.04	23000	---	93.9
184		---	---	ND	---	46.9
185	183/185	44.872	1.04	(23000)	---	93.9
186		---	---	ND	---	46.9
187		44.235	1.04	37000	---	46.9
188		---	---	ND	---	46.9
189		53.094	0.98	986	---	46.9
190		50.406	1.03	4090	---	46.9
191		48.897	1.07	992	---	46.9
192		---	---	ND	---	46.9

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Minneapolis, MN 55414

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

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-02 (FO105875)
Lab Sample ID 10138001002
Filename P101001A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	48.545	1.05	(58400)	---	93.9
194		55.486	0.88	12700	---	70.4
195		52.770	0.90	5040	---	70.4
196		51.177	0.90	7230	---	70.4
197	197/200	47.622	0.89	2760	---	141
198	198/199	50.523	0.89	13800	---	141
199	198/199	50.523	0.89	(13800)	---	141
200	197/200	47.622	0.89	(2760)	---	141
201		46.583	0.89	2530	---	70.4
202		45.644	0.89	3080	---	70.4
203		51.395	0.89	8230	---	70.4
204		---	---	ND	---	70.4
205		56.133	0.87	799	---	70.4
206		58.504	0.78	4500	---	70.4
207		53.460	0.80	563	---	70.4
208		52.468	0.78	984	---	70.4
209		61.004	0.67	595	---	70.4

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	PTI0293-02 (FO105875)
Lab Sample ID	10138001002
Filename	P101001A_05

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	2920
Total Dichloro Biphenyls	24700
Total Trichloro Biphenyls	137000
Total Tetrachloro Biphenyls	183000
Total Pentachloro Biphenyls	211000
Total Hexachloro Biphenyls	395000
Total Heptachloro Biphenyls	238000
Total Octachloro Biphenyls	56200
Total Nonachloro Biphenyls	6050
Decachloro Biphenyls	595
Total PCBs	1260000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-03 (FO105876)		
Lab Sample ID	10138001003		
Filename	P101008A_06		
Injected By	BAL		
Total Amount Extracted	16.9 g	Matrix	Solid
% Moisture	39.3	Dilution	5
Dry Weight Extracted	10.2 g	Collected	09/07/2010 15:39
ICAL ID	P101008A02	Received	09/14/2010 10:05
CCal Filename(s)	P101008A_01	Extracted	10/06/2010 16:40
Method Blank ID	BLANK-26574	Analyzed	10/08/2010 18:33

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.390	2.93	2.0	1.17	59
13C-4-MoCB	3	11.745	2.77	2.0	1.36	68
13C-2,2'-DiCB	4	12.069	1.54	2.0	1.37	68
13C-4,4'-DiCB	15	20.132	1.58	2.0	1.51	76
13C-2,2',6-TrCB	19	16.442	1.09	2.0	1.96	98
13C-3,4,4'-TrCB	37	28.395	1.04	2.0	1.50	75
13C-2,2',6,6'-TeCB	54	20.430	0.76	2.0	1.43	71
13C-3,4,4',5-TeCB	81	35.689	0.82	2.0	1.39	69
13C-3,3',4,4'-TeCB	77	36.259	0.81	2.0	1.25	63
13C-2,2',4,6,6'-PeCB	104	26.952	1.63	2.0	1.69	85
13C-2,3,3',4,4'-PeCB	105	39.848	1.49	2.0	1.54	77
13C-2,3,4,4',5-PeCB	114	39.194	1.64	2.0	1.41	71
13C-2,3',4,4',5-PeCB	118	38.657	1.58	2.0	1.41	70
13C-2,3',4,4',5'-PeCB	123	38.322	1.60	2.0	1.36	68
13C-3,3',4,4',5-PeCB	126	43.050	1.53	2.0	1.33	67
13C-2,2',4,4',6,6'-HxCB	155	33.174	1.28	2.0	1.72	86
13C-HxCB (156/157)	156/157	46.052	1.25	4.0	2.64	66
13C-2,3',4,4',5,5'-HxCB	167	44.895	1.24	2.0	1.36	68
13C-3,3',4,4',5,5'-HxCB	169	49.423	1.29	2.0	1.26	63
13C-2,2',3,4',5,6,6'-HpCB	188	39.127	1.02	2.0	2.00	100
13C-2,3,3',4,4',5,5'-HpCB	189	51.943	1.01	2.0	1.44	72
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.576	0.88	2.0	1.88	94
13C-2,3,3',4,4',5,5',6-OcCB	205	54.723	0.92	2.0	1.57	78
13C-2,2',3,3',4,4',5,5',6-NoCB	206	56.900	0.79	2.0	1.84	92
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.361	0.79	2.0	1.42	71
13C--DeCB	209	59.228	0.71	2.0	1.51	75
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.800	1.11	2.0	1.47	73
13C-2,3,3',5,5'-PeCB	111	36.293	1.58	2.0	1.35	68
13C-2,2',3,3',5,5',6-HpCB	178	42.246	1.06	2.0	1.69	85
Recovery Standards						
13C-2,5-DiCB	9	14.920	1.62	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.930	0.78	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	33.459	1.62	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.810	1.26	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.163	0.91	2.0	NA	NA

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Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-03 (FO105876)
Lab Sample ID 10138001003
Filename P101008A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.414	3.08	354	---	24.4
2		11.481	2.95	63.4	---	24.4
3		11.757	3.10	188	---	24.4
4		12.092	1.54	1830	---	24.4
5		15.879	1.42	112	---	24.4
6		15.519	1.55	1300	---	24.4
7		15.196	1.47	180	---	24.4
8		16.095	1.55	6270	---	24.4
9		14.944	1.51	282	---	24.4
10		12.332	1.54	132	---	24.4
11		19.366	1.55	768	---	147
12	12/13	19.737	1.55	704	---	48.9
13	12/13	19.737	1.55	(704)	---	48.9
14		---	---	ND	---	24.4
15		20.156	1.57	6880	---	24.4
16		20.037	1.06	4580	---	24.4
17		19.485	1.04	4340	---	24.4
18	18/30	18.946	1.04	9010	---	48.9
19		16.478	1.07	1490	---	24.4
20	20/28	23.834	1.04	20000	---	48.9
21	21/33	24.102	1.04	9190	---	48.9
22		24.555	1.03	7260	---	24.4
23		---	---	ND	---	24.4
24		---	---	ND	---	24.4
25		23.113	1.05	1420	---	24.4
26	26/29	22.827	1.03	3500	---	48.9
27		19.749	1.07	1100	---	24.4
28	20/28	23.834	1.04	(20000)	---	48.9
29	26/29	22.827	1.03	(3500)	---	48.9
30	18/30	18.946	1.04	(9010)	---	48.9
31		23.481	1.04	17100	---	24.4
32		20.715	1.03	4530	---	24.4
33	21/33	24.102	1.04	(9190)	---	48.9
34		22.291	1.09	52.2	---	24.4
35		27.975	1.03	437	---	24.4
36		---	---	ND	---	24.4
37		28.428	1.03	7590	---	24.4
38		27.422	0.99	25.6	---	24.4
39		26.802	0.94	101	---	24.4
40	40/41/71	28.210	0.80	15900	---	147
41	40/41/71	28.210	0.80	(15900)	---	147
42		27.657	0.79	7660	---	48.9
43	43/73	26.215	0.80	653	---	97.7
44	44/47/65	27.053	0.78	43200	---	147
45	45/51	23.884	0.77	4540	---	97.7
46		24.253	0.77	1660	---	48.9
47	44/47/65	27.053	0.78	(43200)	---	147
48		26.818	0.80	4890	---	48.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-03 (FO105876)
Lab Sample ID 10138001003
Filename P101008A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	26.500	0.79	22600	---	97.7
50	50/53	23.113	0.80	3870	---	97.7
51	45/51	23.884	0.77	(4540)	---	97.7
52		25.963	0.79	90000	---	48.9
53	50/53	23.113	0.80	(3870)	---	97.7
54		---	---	ND	---	48.9
55		---	---	ND	---	48.9
56		32.335	0.77	10200	---	48.9
57		30.189	1.26 I	---	119	48.9
58		30.407	1.19 I	---	118	48.9
59	59/62/75	27.439	0.78	2250	---	147
60		32.570	0.77	4540	---	48.9
61	61/70/74/76	31.279	0.77	81400	---	195
62	59/62/75	27.439	0.78	(2250)	---	147
63		30.910	0.77	1000	---	48.9
64		28.462	0.79	15800	---	48.9
65	44/47/65	27.053	0.78	(43200)	---	147
66		31.648	0.77	26100	---	48.9
67		30.625	0.80	598	---	48.9
68		29.736	0.76	55.9	---	48.9
69	49/69	26.500	0.79	(22600)	---	97.7
70	61/70/74/76	31.279	0.77	(81400)	---	195
71	40/41/71	28.210	0.80	(15900)	---	147
72		29.418	0.80	115	---	48.9
73	43/73	26.215	0.80	(653)	---	97.7
74	61/70/74/76	31.279	0.77	(81400)	---	195
75	59/62/75	27.439	0.78	(2250)	---	147
76	61/70/74/76	31.279	0.77	(81400)	---	195
77		36.293	0.79	1680	---	48.9
78		---	---	ND	---	48.9
79		34.599	0.72	1080	---	48.9
80		---	---	ND	---	48.9
81		35.672	0.56 I	---	103	48.9
82		35.873	1.55	14200	---	48.9
83		33.962	1.55	9550	---	48.9
84		31.463	1.57	34200	---	48.9
85	85/116/117	35.370	1.56	18400	---	147
86	86/87/97/108/119/125	34.700	1.58	88700	---	293
87	86/87/97/108/119/125	34.700	1.58	(88700)	---	293
88	88/91	31.228	1.57	15100	---	97.7
89		31.983	1.57	892	---	48.9
90	90/101/113	33.475	1.58	126000	---	147
91	88/91	31.228	1.57	(15100)	---	97.7
92		32.855	1.56	22800	---	48.9
93	93/98/100/102	30.692	1.64	2820	---	195
94		29.803	1.55	381	---	48.9
95		30.306	1.56	103000	---	48.9
96		27.388	1.61	575	---	48.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-03 (FO105876)
Lab Sample ID 10138001003
Filename P101008A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	34.700	1.58	(88700)	---	293
98	93/98/100/102	30.692	1.64	(2820)	---	195
99		34.096	1.58	43800	---	48.9
100	93/98/100/102	30.692	1.64	(2820)	---	195
101	90/101/113	33.475	1.58	(126000)	---	147
102	93/98/100/102	30.692	1.64	(2820)	---	195
103		29.568	1.58	458	---	48.9
104		---	---	ND	---	48.9
105		39.881	1.56	43000	---	48.9
106		---	---	ND	---	48.9
107	107/124	37.969	1.56	5040	---	97.7
108	86/87/97/108/119/125	34.700	1.58	(88700)	---	293
109		38.221	1.56	5880	---	48.9
110	110/115	35.538	1.57	137000	---	97.7
111		---	---	ND	---	48.9
112		---	---	ND	---	48.9
113	90/101/113	33.475	1.58	(126000)	---	147
114		39.227	1.58	2750	---	48.9
115	110/115	35.538	1.57	(137000)	---	97.7
116	85/116/117	35.370	1.56	(18400)	---	147
117	85/116/117	35.370	1.56	(18400)	---	147
118		38.691	1.56	119000	---	48.9
119	86/87/97/108/119/125	34.700	1.58	(88700)	---	293
120		36.779	1.57	57.8	---	48.9
121		---	---	ND	---	48.9
122		39.009	1.53	1330	---	48.9
123		38.322	1.63	2370	---	48.9
124	107/124	37.969	1.56	(5040)	---	97.7
125	86/87/97/108/119/125	34.700	1.58	(88700)	---	293
126		43.050	1.01 I	---	216	48.9
127		41.424	1.38	201	---	48.9
128	128/166	43.117	1.23	18900	---	97.7
129	129/138/163	41.843	1.24	118000	---	147
130		41.189	1.26	8150	---	48.9
131		38.271	1.29	2310	---	48.9
132		38.741	1.23	41000	---	48.9
133		39.294	1.23	1290	---	48.9
134	134/143	37.651	1.24	6840	---	97.7
135	135/151	36.511	1.27	23700	---	97.7
136		33.962	1.26	13100	---	48.9
137		41.424	1.25	8300	---	48.9
138	129/138/163	41.843	1.24	(118000)	---	147
139	139/140	38.070	1.18	2480	---	97.7
140	139/140	38.070	1.18	(2480)	---	97.7
141		40.770	1.25	17300	---	48.9
142		---	---	ND	---	48.9
143	134/143	37.651	1.24	(6840)	---	97.7
144		37.081	1.26	4490	---	48.9

Conc = Concentration
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R = Recovery outside of Method 1668A control limits
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* = See Discussion
X = Outside QC Limits
RT = Retention Time
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ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-03 (FO105876)
Lab Sample ID 10138001003
Filename P101008A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	48.9
146		39.948	1.25	12700	---	48.9
147	147/149	37.450	1.25	73100	---	97.7
148		35.873	1.25	58.2	---	48.9
149	147/149	37.450	1.25	(73100)	---	97.7
150		33.593	1.28	90.8	---	48.9
151	135/151	36.511	1.27	(23700)	---	97.7
152		33.375	1.26	110	---	48.9
153	153/168	40.585	1.25	77600	---	97.7
154		36.762	1.25	619	---	48.9
155		---	---	ND	---	48.9
156	156/157	46.069	1.25	17100	---	97.7
157	156/157	46.069	1.25	(17100)	---	97.7
158		42.246	1.24	12100	---	48.9
159		44.140	0.78 I	---	56.9	48.9
160		---	---	ND	---	48.9
161		---	---	ND	---	48.9
162		44.476	1.24	578	---	48.9
163	129/138/163	41.843	1.24	(118000)	---	147
164		41.524	1.26	6250	---	48.9
165		---	---	ND	---	48.9
166	128/166	43.117	1.23	(18900)	---	97.7
167		44.929	1.22	5040	---	48.9
168	153/168	40.585	1.25	(77600)	---	97.7
169		49.439	1.78 I	---	59.1	48.9
170		48.735	1.05	12000	---	48.9
171	171/173	45.147	1.04	3970	---	97.7
172		46.790	1.06	1960	---	48.9
173	171/173	45.147	1.04	(3970)	---	97.7
174		44.057	1.05	10800	---	48.9
175		42.933	1.07	529	---	48.9
176		40.401	1.06	1670	---	48.9
177		44.493	1.05	6520	---	48.9
178		42.296	1.04	2130	---	48.9
179		39.495	1.05	4860	---	48.9
180	180/193	47.461	1.06	24800	---	97.7
181		44.929	1.05	199	---	48.9
182		---	---	ND	---	48.9
183	183/185	43.822	1.05	8590	---	97.7
184		---	---	ND	---	48.9
185	183/185	43.822	1.05	(8590)	---	97.7
186		---	---	ND	---	48.9
187		43.201	1.04	12300	---	48.9
188		---	---	ND	---	48.9
189		51.943	1.02	573	---	48.9
190		49.288	1.05	2170	---	48.9
191		47.830	1.07	484	---	48.9
192		---	---	ND	---	48.9

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

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-03 (FO105876)
Lab Sample ID 10138001003
Filename P101008A_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.461	1.06	(24800)	---	97.7
194		54.184	0.90	5600	---	73.3
195		51.662	0.90	1960	---	73.3
196		50.093	0.89	2760	---	73.3
197	197/200	46.555	0.91	946	---	147
198	198/199	49.439	0.89	5310	---	147
199	198/199	49.439	0.89	(5310)	---	147
200	197/200	46.555	0.91	(946)	---	147
201		45.549	0.88	744	---	73.3
202		44.593	0.88	1010	---	73.3
203		50.295	0.90	3290	---	73.3
204		---	---	ND	---	73.3
205		54.766	0.91	306	---	73.3
206		56.943	0.78	2250	---	73.3
207		52.331	0.80	279	---	73.3
208		51.382	0.77	496	---	73.3
209		59.228	0.72	476	---	73.3

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	PTI0293-03 (FO105876)
Lab Sample ID	10138001003
Filename	P101008A_06

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	605
Total Dichloro Biphenyls	18500
Total Trichloro Biphenyls	91700
Total Tetrachloro Biphenyls	340000
Total Pentachloro Biphenyls	798000
Total Hexachloro Biphenyls	471000
Total Heptachloro Biphenyls	93600
Total Octachloro Biphenyls	21900
Total Nonachloro Biphenyls	3020
Decachloro Biphenyls	476
Total PCBs	1840000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-04 (FO105877)		
Lab Sample ID	10138001004		
Filename	P101008A_07		
Injected By	BAL		
Total Amount Extracted	16.0 g	Matrix	Solid
% Moisture	36.8	Dilution	5
Dry Weight Extracted	10.1 g	Collected	09/08/2010 11:22
ICAL ID	P101008A02	Received	09/14/2010 10:05
CCal Filename(s)	P101008A_01	Extracted	10/06/2010 16:40
Method Blank ID	BLANK-26574	Analyzed	10/08/2010 19:37

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes							
13C-2-MoCB	1	8.414	2.88	2.0	1.16	58	
13C-4-MoCB	3	11.756	2.19	2.0	1.43	79	I
13C-2,2'-DiCB	4	12.080	1.58	2.0	1.39	70	
13C-4,4'-DiCB	15	20.167	1.61	2.0	1.22	61	
13C-2,2',6-TrCB	19	16.489	1.16	2.0	1.42	71	
13C-3,4,4'-TrCB	37	28.460	1.06	2.0	1.51	75	
13C-2,2',6,6'-TeCB	54	20.478	0.79	2.0	1.58	79	
13C-3,4,4',5-TeCB	81	35.755	0.81	2.0	1.23	62	
13C-3,3',4,4'-TeCB	77	36.342	0.81	2.0	1.24	62	
13C-2,2',4,6,6'-PeCB	104	26.984	1.55	2.0	1.77	88	
13C-2,3,3',4,4'-PeCB	105	39.930	1.50	2.0	1.10	55	
13C-2,3,4,4',5-PeCB	114	39.276	1.54	2.0	1.13	56	
13C-2,3',4,4',5-PeCB	118	38.740	1.54	2.0	1.15	57	
13C-2,3',4,4',5'-PeCB	123	38.388	1.61	2.0	1.17	58	
13C-3,3',4,4',5-PeCB	126	43.167	1.54	2.0	1.02	51	
13C-2,2',4,4',6,6'-HxCB	155	33.223	1.27	2.0	2.17	108	
13C-HxCB (156/157)	156/157	46.168	1.27	4.0	2.41	60	
13C-2,3',4,4',5,5'-HxCB	167	45.011	1.27	2.0	1.30	65	
13C-3,3',4,4',5,5'-HxCB	169	49.556	1.23	2.0	1.16	58	
13C-2,2',3,4',5,6,6'-HpCB	188	39.192	1.04	2.0	2.32	116	
13C-2,3,3',4,4',5,5'-HpCB	189	52.071	0.98	2.0	1.51	75	
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.676	0.86	2.0	1.95	98	
13C-2,3,3',4,4',5,5',6-OcCB	205	54.873	0.92	2.0	1.56	78	
13C-2,2',3,3',4,4',5,5',6-NoCB	206	57.093	0.83	2.0	1.83	92	
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.446	0.78	2.0	1.49	74	
13C--DeCB	209	59.378	0.73	2.0	1.48	74	
Cleanup Standards							
13C-2,4,4'-TrCB	28	23.849	1.07	2.0	1.63	82	
13C-2,3,3',5,5'-PeCB	111	36.358	1.55	2.0	1.37	68	
13C-2,2',3,3',5,5',6-HpCB	178	42.345	1.06	2.0	1.60	80	
Recovery Standards							
13C-2,5-DiCB	9	14.955	1.62	2.0	NA	NA	
13C-2,2',5,5'-TeCB	52	25.962	0.77	2.0	NA	NA	
13C-2,2',4,5,5'-PeCB	101	33.491	1.59	2.0	NA	NA	
13C-2,2',3,4,4',5'-HxCB	138	41.909	1.27	2.0	NA	NA	
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.312	0.91	2.0	NA	NA	

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.426	3.02	122	---	24.8
2		11.493	3.01	50.6	---	24.8
3		11.780	3.04	113	---	24.8
4		12.116	1.56	1040	---	24.8
5		15.938	1.62	54.0	---	24.8
6		15.542	1.54	566	---	24.8
7		15.207	1.54	101	---	24.8
8		16.129	1.56	2610	---	24.8
9		14.979	1.47	163	---	24.8
10		12.367	1.45	86.7	---	24.8
11		19.400	1.55	1210	---	149
12	12/13	19.760	1.55	416	---	49.6
13	12/13	19.760	1.55	(416)	---	49.6
14		---	---	ND	---	24.8
15		20.191	1.55	3610	---	24.8
16		20.071	1.03	2650	---	24.8
17		19.508	1.04	2310	---	24.8
18	18/30	18.981	1.05	4590	---	49.6
19		16.513	1.08	837	---	24.8
20	20/28	23.866	1.03	11100	---	49.6
21	21/33	24.134	1.03	5470	---	49.6
22		24.587	1.03	4370	---	24.8
23		---	---	ND	---	24.8
24		---	---	ND	---	24.8
25		23.144	1.02	716	---	24.8
26	26/29	22.859	1.02	1730	---	49.6
27		19.784	1.06	639	---	24.8
28	20/28	23.866	1.03	(11100)	---	49.6
29	26/29	22.859	1.02	(1730)	---	49.6
30	18/30	18.981	1.05	(4590)	---	49.6
31		23.513	1.04	8800	---	24.8
32		20.747	1.04	2390	---	24.8
33	21/33	24.134	1.03	(5470)	---	49.6
34		22.289	0.98	29.9	---	24.8
35		28.007	0.97	295	---	24.8
36		---	---	ND	---	24.8
37		28.460	1.02	4850	---	24.8
38		---	---	ND	---	24.8
39		26.850	0.92	56.4	---	24.8
40	40/41/71	28.225	0.78	8980	---	149
41	40/41/71	28.225	0.78	(8980)	---	149
42		27.689	0.79	4180	---	49.6
43	43/73	26.263	0.75	343	---	99.2
44	44/47/65	27.102	0.78	14100	---	149
45	45/51	23.933	0.78	2990	---	99.2
46		24.302	0.77	1090	---	49.6
47	44/47/65	27.102	0.78	(14100)	---	149
48		26.834	0.78	2710	---	49.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	26.549	0.77	7480	---	99.2
50	50/53	23.144	0.79	2000	---	99.2
51	45/51	23.933	0.78	(2990)	---	99.2
52		25.995	0.79	17300	---	49.6
53	50/53	23.144	0.79	(2000)	---	99.2
54		---	---	ND	---	49.6
55		---	---	ND	---	49.6
56		32.384	0.79	4060	---	49.6
57		30.204	0.77	60.5	---	49.6
58		---	---	ND	---	49.6
59	59/62/75	27.471	0.78	1430	---	149
60		32.619	0.75	2120	---	49.6
61	61/70/74/76	31.328	0.77	17100	---	198
62	59/62/75	27.471	0.78	(1430)	---	149
63		30.959	0.80	394	---	49.6
64		28.494	0.81	6390	---	49.6
65	44/47/65	27.102	0.78	(14100)	---	149
66		31.680	0.77	8920	---	49.6
67		30.674	0.75	337	---	49.6
68		---	---	ND	---	49.6
69	49/69	26.549	0.77	(7480)	---	99.2
70	61/70/74/76	31.328	0.77	(17100)	---	198
71	40/41/71	28.225	0.78	(8980)	---	149
72		29.466	0.78	64.5	---	49.6
73	43/73	26.263	0.75	(343)	---	99.2
74	61/70/74/76	31.328	0.77	(17100)	---	198
75	59/62/75	27.471	0.78	(1430)	---	149
76	61/70/74/76	31.328	0.77	(17100)	---	198
77		36.375	0.77	1110	---	49.6
78		---	---	ND	---	49.6
79		34.665	0.74	177	---	49.6
80		---	---	ND	---	49.6
81		---	---	ND	---	49.6
82		35.922	1.56	2780	---	49.6
83		33.994	1.55	1470	---	49.6
84		31.495	1.57	5960	---	49.6
85	85/116/117	35.402	1.69	2980	---	149
86	86/87/97/108/119/125	34.749	1.56	14800	---	298
87	86/87/97/108/119/125	34.749	1.56	(14800)	---	298
88	88/91	31.277	1.56	2830	---	99.2
89		32.015	1.66	252	---	49.6
90	90/101/113	33.524	1.57	20000	---	149
91	88/91	31.277	1.56	(2830)	---	99.2
92		32.904	1.57	3720	---	49.6
93	93/98/100/102	30.724	1.72	758	---	198
94		29.835	1.51	107	---	49.6
95		30.338	1.58	16800	---	49.6
96		27.437	1.61	185	---	49.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	34.749	1.56	(14800)	---	298
98	93/98/100/102	30.724	1.72	(758)	---	198
99		34.145	1.57	6930	---	49.6
100	93/98/100/102	30.724	1.72	(758)	---	198
101	90/101/113	33.524	1.57	(20000)	---	149
102	93/98/100/102	30.724	1.72	(758)	---	198
103		29.600	1.54	98.5	---	49.6
104		---	---	ND	---	49.6
105		39.964	1.54	8380	---	49.6
106		---	---	ND	---	49.6
107	107/124	38.052	1.57	764	---	99.2
108	86/87/97/108/119/125	34.749	1.56	(14800)	---	298
109		38.304	1.56	1070	---	49.6
110	110/115	35.604	1.59	23500	---	99.2
111		---	---	ND	---	49.6
112		---	---	ND	---	49.6
113	90/101/113	33.524	1.57	(20000)	---	149
114		39.293	1.60	470	---	49.6
115	110/115	35.604	1.59	(23500)	---	99.2
116	85/116/117	35.402	1.69	(2980)	---	149
117	85/116/117	35.402	1.69	(2980)	---	149
118		38.773	1.54	17800	---	49.6
119	86/87/97/108/119/125	34.749	1.56	(14800)	---	298
120		---	---	ND	---	49.6
121		---	---	ND	---	49.6
122		39.092	1.35	232	---	49.6
123		38.404	1.56	247	---	49.6
124	107/124	38.052	1.57	(764)	---	99.2
125	86/87/97/108/119/125	34.749	1.56	(14800)	---	298
126		43.150	1.14 I	---	85.3	49.6
127		---	---	ND	---	49.6
128	128/166	43.217	1.14	3990	---	99.2
129	129/138/163	41.926	1.24	24700	---	149
130		41.272	1.24	1680	---	49.6
131		38.354	1.16	418	---	49.6
132		38.807	1.24	8490	---	49.6
133		39.360	1.18	274	---	49.6
134	134/143	37.734	1.07	1180	---	99.2
135	135/151	36.560	1.25	6590	---	99.2
136		33.994	1.25	2970	---	49.6
137		41.490	1.24	1270	---	49.6
138	129/138/163	41.926	1.24	(24700)	---	149
139	139/140	38.136	1.26	411	---	99.2
140	139/140	38.136	1.26	(411)	---	99.2
141		40.853	1.26	3860	---	49.6
142		---	---	ND	---	49.6
143	134/143	37.734	1.07	(1180)	---	99.2
144		37.113	1.23	640	---	49.6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	49.6
146		40.031	1.23	2740	---	49.6
147	147/149	37.516	1.25	15900	---	99.2
148		---	---	ND	---	49.6
149	147/149	37.516	1.25	(15900)	---	99.2
150		---	---	ND	---	49.6
151	135/151	36.560	1.25	(6590)	---	99.2
152		---	---	ND	---	49.6
153	153/168	40.651	1.23	16500	---	99.2
154		36.828	1.10	134	---	49.6
155		---	---	ND	---	49.6
156	156/157	46.168	1.24	3750	---	99.2
157	156/157	46.168	1.24	(3750)	---	99.2
158		42.345	1.24	2390	---	49.6
159		---	---	ND	---	49.6
160		---	---	ND	---	49.6
161		---	---	ND	---	49.6
162		44.592	1.27	155	---	49.6
163	129/138/163	41.926	1.24	(24700)	---	149
164		41.607	1.23	1490	---	49.6
165		---	---	ND	---	49.6
166	128/166	43.217	1.14	(3990)	---	99.2
167		45.028	1.29	1080	---	49.6
168	153/168	40.651	1.23	(16500)	---	99.2
169		---	---	ND	---	49.6
170		48.851	1.05	3920	---	49.6
171	171/173	45.229	1.05	1190	---	99.2
172		46.906	1.06	705	---	49.6
173	171/173	45.229	1.05	(1190)	---	99.2
174		44.139	1.04	3610	---	49.6
175		43.016	0.94	187	---	49.6
176		40.467	1.03	535	---	49.6
177		44.592	1.05	2250	---	49.6
178		42.378	1.05	780	---	49.6
179		39.561	1.03	1670	---	49.6
180	180/193	47.577	1.05	7990	---	99.2
181		45.028	1.07	79.1	---	49.6
182		---	---	ND	---	49.6
183	183/185	43.921	1.04	2880	---	99.2
184		---	---	ND	---	49.6
185	183/185	43.921	1.04	(2880)	---	99.2
186		---	---	ND	---	49.6
187		43.284	1.04	4230	---	49.6
188		---	---	ND	---	49.6
189		52.114	1.04	212	---	49.6
190		49.405	1.05	731	---	49.6
191		47.929	1.07	157	---	49.6
192		---	---	ND	---	49.6

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.577	1.05	(7990)	---	99.2
194		54.334	0.89	1920	---	74.4
195		51.791	0.92	642	---	74.4
196		50.210	0.90	1030	---	74.4
197	197/200	46.655	0.92	360	---	149
198	198/199	49.556	0.90	2350	---	149
199	198/199	49.556	0.90	(2350)	---	149
200	197/200	46.655	0.92	(360)	---	149
201		45.632	0.90	309	---	74.4
202		44.693	0.89	480	---	74.4
203		50.411	0.89	1370	---	74.4
204		---	---	ND	---	74.4
205		54.937	0.93	108	---	74.4
206		57.114	0.76	1480	---	74.4
207		52.459	0.79	179	---	74.4
208		51.489	0.82	420	---	74.4
209		59.442	0.69	930	---	74.4

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-04 (FO105877)
Lab Sample ID 10138001004
Filename P101008A_07

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	286
Total Dichloro Biphenyls	9860
Total Trichloro Biphenyls	50800
Total Tetrachloro Biphenyls	103000
Total Pentachloro Biphenyls	132000
Total Hexachloro Biphenyls	101000
Total Heptachloro Biphenyls	31100
Total Octachloro Biphenyls	8570
Total Nonachloro Biphenyls	2080
Decachloro Biphenyls	930
Total PCBs	440000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-05 (FO105878)		
Lab Sample ID	10138001005		
Filename	P101008A_09		
Injected By	BAL		
Total Amount Extracted	21.3 g	Matrix	Solid
% Moisture	52.3	Dilution	5
Dry Weight Extracted	10.2 g	Collected	09/08/2010 12:35
ICAL ID	P101008A02	Received	09/14/2010 10:05
CCal Filename(s)	P101008A_01	Extracted	10/06/2010 16:40
Method Blank ID	BLANK-26574	Analyzed	10/08/2010 21:46

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.426	3.12	2.0	1.20	60
13C-4-MoCB	3	11.781	2.89	2.0	1.48	74
13C-2,2'-DiCB	4	12.105	1.64	2.0	1.46	73
13C-4,4'-DiCB	15	20.168	1.57	2.0	1.21	61
13C-2,2',6-TrCB	19	16.526	1.16	2.0	1.77	89
13C-3,4,4'-TrCB	37	28.512	1.11	2.0	1.66	83
13C-2,2',6,6'-TeCB	54	20.496	0.79	2.0	1.55	78
13C-3,4,4',5-TeCB	81	35.806	0.79	2.0	1.30	65
13C-3,3',4,4'-TeCB	77	36.410	0.81	2.0	1.36	68
13C-2,2',4,6,6'-PeCB	104	27.036	1.60	2.0	1.77	89
13C-2,3,3',4,4'-PeCB	105	40.015	1.63	2.0	1.11	55
13C-2,3,4,4',5-PeCB	114	39.361	1.54	2.0	1.26	63
13C-2,3',4,4',5-PeCB	118	38.808	1.56	2.0	1.21	61
13C-2,3',4,4',5'-PeCB	123	38.473	1.54	2.0	1.30	65
13C-3,3',4,4',5-PeCB	126	43.269	1.57	2.0	1.07	53
13C-2,2',4,4',6,6'-HxCB	155	33.257	1.29	2.0	2.14	107
13C-HxCB (156/157)	156/157	46.271	1.29	4.0	2.33	58
13C-2,3',4,4',5,5'-HxCB	167	45.113	1.27	2.0	1.27	64
13C-3,3',4,4',5,5'-HxCB	169	49.641	1.28	2.0	1.07	54
13C-2,2',3,4',5,6,6'-HpCB	188	39.261	1.09	2.0	2.63	132
13C-2,3,3',4,4',5,5'-HpCB	189	52.202	0.99	2.0	1.54	77
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.745	0.88	2.0	2.03	101
13C-2,3,3',4,4',5,5',6-OcCB	205	55.025	0.96	2.0	1.60	80
13C-2,2',3,3',4,4',5,5',6-NoCB	206	57.224	0.79	2.0	1.80	90
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.577	0.88	2.0	1.45	72
13C--DeCB	209	59.552	0.75	2.0	1.47	73
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.867	1.07	2.0	1.68	84
13C-2,3,3',5,5'-PeCB	111	36.427	1.59	2.0	1.49	75
13C-2,2',3,3',5,5',6-HpCB	178	42.430	1.01	2.0	1.50	75
Recovery Standards						
13C-2,5-DiCB	9	14.980	1.68	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.996	0.80	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	33.543	1.65	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.994	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.443	0.97	2.0	NA	NA

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-05 (FO105878)
Lab Sample ID 10138001005
Filename P101008A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.462	3.22	147	---	24.6
2		11.529	3.31	49.4	---	24.6
3		11.793	3.34	108	---	24.6
4		12.141	1.53	566	---	24.6
5		15.975	1.50	48.5	---	24.6
6		15.591	1.52	401	---	24.6
7		15.244	1.52	78.1	---	24.6
8		16.166	1.60	2240	---	24.6
9		15.004	1.57	120	---	24.6
10		12.380	1.41	44.8	---	24.6
11		19.437	1.55	1610	---	148
12	12/13	19.797	1.54	411	---	49.2
13	12/13	19.797	1.54	(411)	---	49.2
14		---	---	ND	---	24.6
15		20.180	1.54	2150	---	24.6
16		20.108	1.08	1560	---	24.6
17		19.545	1.06	1430	---	24.6
18	18/30	19.018	1.04	2860	---	49.2
19		16.550	1.04	543	---	24.6
20	20/28	23.900	1.02	8070	---	49.2
21	21/33	24.169	1.06	3740	---	49.2
22		24.621	1.04	3090	---	24.6
23		---	---	ND	---	24.6
24		---	---	ND	---	24.6
25		23.179	1.06	529	---	24.6
26	26/29	22.894	1.03	1230	---	49.2
27		19.820	1.06	411	---	24.6
28	20/28	23.900	1.02	(8070)	---	49.2
29	26/29	22.894	1.03	(1230)	---	49.2
30	18/30	19.018	1.04	(2860)	---	49.2
31		23.548	1.04	6300	---	24.6
32		20.781	1.03	1660	---	24.6
33	21/33	24.169	1.06	(3740)	---	49.2
34		---	---	ND	---	24.6
35		28.059	0.98	235	---	24.6
36		---	---	ND	---	24.6
37		28.512	1.02	3450	---	24.6
38		---	---	ND	---	24.6
39		26.885	1.10	43.9	---	24.6
40	40/41/71	28.277	0.79	6400	---	148
41	40/41/71	28.277	0.79	(6400)	---	148
42		27.740	0.79	3030	---	49.2
43	43/73	26.281	0.81	282	---	49.2
44	44/47/65	27.137	0.79	10600	---	148
45	45/51	23.951	0.77	2200	---	98.4
46		24.320	0.79	795	---	49.2
47	44/47/65	27.137	0.79	(10600)	---	148
48		26.885	0.78	1980	---	49.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-05 (FO105878)
Lab Sample ID 10138001005
Filename P101008A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	26.583	0.79	5610	---	98.4
50	50/53	23.179	0.79	1510	---	98.4
51	45/51	23.951	0.77	(2200)	---	98.4
52		26.047	0.78	13400	---	49.2
53	50/53	23.179	0.79	(1510)	---	98.4
54		---	---	ND	---	49.2
55		---	---	ND	---	49.2
56		32.436	0.77	3050	---	49.2
57		30.273	0.73	62.7	---	49.2
58		---	---	ND	---	49.2
59	59/62/75	27.506	0.78	1050	---	148
60		32.671	0.80	1630	---	49.2
61	61/70/74/76	31.379	0.77	12400	---	197
62	59/62/75	27.506	0.78	(1050)	---	148
63		31.010	0.75	302	---	49.2
64		28.529	0.79	4890	---	49.2
65	44/47/65	27.137	0.79	(10600)	---	148
66		31.731	0.78	6780	---	49.2
67		30.709	0.79	266	---	49.2
68		---	---	ND	---	49.2
69	49/69	26.583	0.79	(5610)	---	98.4
70	61/70/74/76	31.379	0.77	(12400)	---	197
71	40/41/71	28.277	0.79	(6400)	---	148
72		29.484	0.74	54.8	---	49.2
73	43/73	26.281	0.81	(282)	---	49.2
74	61/70/74/76	31.379	0.77	(12400)	---	197
75	59/62/75	27.506	0.78	(1050)	---	148
76	61/70/74/76	31.379	0.77	(12400)	---	197
77		36.427	0.79	847	---	49.2
78		---	---	ND	---	49.2
79		34.683	0.72	60.0	---	49.2
80		---	---	ND	---	49.2
81		---	---	ND	---	49.2
82		35.974	1.58	1860	---	49.2
83		34.046	1.58	824	---	49.2
84		31.547	1.57	4400	---	49.2
85	85/116/117	35.488	1.55	2350	---	148
86	86/87/97/108/119/125	34.817	1.56	10500	---	295
87	86/87/97/108/119/125	34.817	1.56	(10500)	---	295
88	88/91	31.329	1.56	2110	---	98.4
89		32.067	1.59	196	---	49.2
90	90/101/113	33.576	1.58	14500	---	148
91	88/91	31.329	1.56	(2110)	---	98.4
92		32.956	1.58	2720	---	49.2
93	93/98/100/102	30.759	1.58	539	---	197
94		29.887	1.59	88.2	---	49.2
95		30.390	1.57	13100	---	49.2
96		27.472	1.61	135	---	49.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-05 (FO105878)
Lab Sample ID 10138001005
Filename P101008A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	34.817	1.56	(10500)	---	295
98	93/98/100/102	30.759	1.58	(539)	---	197
99		34.197	1.58	5250	---	49.2
100	93/98/100/102	30.759	1.58	(539)	---	197
101	90/101/113	33.576	1.58	(14500)	---	148
102	93/98/100/102	30.759	1.58	(539)	---	197
103		29.652	1.48	72.9	---	49.2
104		---	---	ND	---	49.2
105		40.049	1.57	5520	---	49.2
106		---	---	ND	---	49.2
107	107/124	38.120	1.56	580	---	98.4
108	86/87/97/108/119/125	34.817	1.56	(10500)	---	295
109		38.389	1.59	792	---	49.2
110	110/115	35.655	1.57	16700	---	98.4
111		---	---	ND	---	49.2
112		---	---	ND	---	49.2
113	90/101/113	33.576	1.58	(14500)	---	148
114		39.378	1.58	320	---	49.2
115	110/115	35.655	1.57	(16700)	---	98.4
116	85/116/117	35.488	1.55	(2350)	---	148
117	85/116/117	35.488	1.55	(2350)	---	148
118		38.842	1.57	12800	---	49.2
119	86/87/97/108/119/125	34.817	1.56	(10500)	---	295
120		---	---	ND	---	49.2
121		---	---	ND	---	49.2
122		39.177	1.47	166	---	49.2
123		38.489	1.70	268	---	49.2
124	107/124	38.120	1.56	(580)	---	98.4
125	86/87/97/108/119/125	34.817	1.56	(10500)	---	295
126		43.269	1.58	137	---	49.2
127		---	---	ND	---	49.2
128	128/166	43.302	1.24	2760	---	98.4
129	129/138/163	42.011	1.24	17500	---	148
130		41.357	1.25	1170	---	49.2
131		38.406	1.21	320	---	49.2
132		38.875	1.23	5960	---	49.2
133		39.462	1.22	215	---	49.2
134	134/143	37.802	1.25	840	---	98.4
135	135/151	36.628	1.27	5850	---	98.4
136		34.046	1.24	2310	---	49.2
137		41.575	1.25	903	---	49.2
138	129/138/163	42.011	1.24	(17500)	---	148
139	139/140	38.204	1.31	324	---	98.4
140	139/140	38.204	1.31	(324)	---	98.4
141		40.938	1.26	3010	---	49.2
142		---	---	ND	---	49.2
143	134/143	37.802	1.25	(840)	---	98.4
144		37.232	1.27	669	---	49.2

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

Pace Analytical Services, Inc.
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 PTI0293-05 (FO105878)
Lab Sample ID 10138001005
Filename P101008A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	49.2
146		40.116	1.25	1980	---	49.2
147	147/149	37.584	1.27	13100	---	98.4
148		---	---	ND	---	49.2
149	147/149	37.584	1.27	(13100)	---	98.4
150		---	---	ND	---	49.2
151	135/151	36.628	1.27	(5850)	---	98.4
152		---	---	ND	---	49.2
153	153/168	40.737	1.24	13300	---	98.4
154		36.896	1.11	118	---	49.2
155		---	---	ND	---	49.2
156	156/157	46.287	1.26	2430	---	98.4
157	156/157	46.287	1.26	(2430)	---	98.4
158		42.413	1.25	1650	---	49.2
159		---	---	ND	---	49.2
160		---	---	ND	---	49.2
161		---	---	ND	---	49.2
162		44.677	1.18	134	---	49.2
163	129/138/163	42.011	1.24	(17500)	---	148
164		41.709	1.22	1090	---	49.2
165		---	---	ND	---	49.2
166	128/166	43.302	1.24	(2760)	---	98.4
167		45.130	1.25	791	---	49.2
168	153/168	40.737	1.24	(13300)	---	98.4
169		49.691	1.81 I	---	67.8	49.2
170		48.970	1.05	2900	---	49.2
171	171/173	45.315	1.02	998	---	98.4
172		47.008	1.05	632	---	49.2
173	171/173	45.315	1.02	(998)	---	98.4
174		44.225	1.01	3870	---	49.2
175		43.101	1.03	193	---	49.2
176		40.552	1.03	585	---	49.2
177		44.677	1.01	2090	---	49.2
178		42.464	1.06	876	---	49.2
179		39.630	1.05	2200	---	49.2
180	180/193	47.679	1.04	7730	---	98.4
181		---	---	ND	---	49.2
182		---	---	ND	---	49.2
183	183/185	44.007	1.08	3010	---	98.4
184		---	---	ND	---	49.2
185	183/185	44.007	1.08	(3010)	---	98.4
186		---	---	ND	---	49.2
187		43.369	1.05	5090	---	49.2
188		---	---	ND	---	49.2
189		52.202	0.98	190	---	49.2
190		49.524	1.02	630	---	49.2
191		48.031	1.07	117	---	49.2
192		---	---	ND	---	49.2

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-05 (FO105878)
Lab Sample ID 10138001005
Filename P101008A_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.679	1.04	(7730)	---	98.4
194		54.465	0.89	2560	---	73.8
195		51.900	0.91	800	---	73.8
196		50.312	0.90	1370	---	73.8
197	197/200	46.757	0.95	461	---	148
198	198/199	49.658	0.90	3770	---	148
199	198/199	49.658	0.90	(3770)	---	148
200	197/200	46.757	0.95	(461)	---	148
201		45.717	0.94	559	---	73.8
202		44.778	0.90	994	---	73.8
203		50.513	0.90	2010	---	73.8
204		---	---	ND	---	73.8
205		55.047	0.98	120	---	73.8
206		57.267	0.79	2140	---	73.8
207		52.547	0.84	275	---	73.8
208		51.577	0.79	644	---	73.8
209		59.595	0.71	538	---	73.8

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	PTI0293-05 (FO105878)
Lab Sample ID	10138001005
Filename	P101008A_09

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	304
Total Dichloro Biphenyls	7670
Total Trichloro Biphenyls	35200
Total Tetrachloro Biphenyls	77200
Total Pentachloro Biphenyls	95900
Total Hexachloro Biphenyls	76400
Total Heptachloro Biphenyls	31100
Total Octachloro Biphenyls	12600
Total Nonachloro Biphenyls	3060
Decachloro Biphenyls	538
Total PCBs	340000

ND = Not Detected
Results reported on a dry weight basis

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTI0293-06 (FO105879)		
Lab Sample ID	10138001006		
Filename	P101008A_05		
Injected By	BAL		
Total Amount Extracted	16.3 g	Matrix	Solid
% Moisture	37.1	Dilution	5
Dry Weight Extracted	10.2 g	Collected	09/07/2010
ICAL ID	P101008A02	Received	09/14/2010 10:05
CCal Filename(s)	P101008A_01	Extracted	10/06/2010 16:40
Method Blank ID	BLANK-26574	Analyzed	10/08/2010 17:28

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.378	3.11	2.0	1.01	51
13C-4-MoCB	3	11.696	2.88	2.0	1.13	57
13C-2,2'-DiCB	4	12.056	1.60	2.0	1.48	74
13C-4,4'-DiCB	15	20.108	1.60	2.0	1.61	80
13C-2,2',6-TrCB	19	16.429	1.05	2.0	1.33	67
13C-3,4,4'-TrCB	37	28.377	1.05	2.0	1.30	65
13C-2,2',6,6'-TeCB	54	20.412	0.80	2.0	1.33	66
13C-3,4,4',5-TeCB	81	35.672	0.78	2.0	1.03	51
13C-3,3',4,4'-TeCB	77	36.259	0.80	2.0	1.05	52
13C-2,2',4,6,6'-PeCB	104	26.919	1.56	2.0	1.54	77
13C-2,3,3',4,4'-PeCB	105	39.848	1.58	2.0	1.05	52
13C-2,3,4,4',5-PeCB	114	39.210	1.63	2.0	1.08	54
13C-2,3',4,4',5-PeCB	118	38.640	1.56	2.0	1.05	52
13C-2,3',4,4',5'-PeCB	123	38.322	1.58	2.0	1.06	53
13C-3,3',4,4',5-PeCB	126	43.034	1.57	2.0	1.03	52
13C-2,2',4,4',6,6'-HxCB	155	33.157	1.27	2.0	1.62	81
13C-HxCB (156/157)	156/157	46.086	1.29	4.0	2.23	56
13C-2,3',4,4',5,5'-HxCB	167	44.895	1.24	2.0	1.13	57
13C-3,3',4,4',5,5'-HxCB	169	49.406	1.35	2.0	1.17	59
13C-2,2',3,4',5,6,6'-HpCB	188	39.127	1.06	2.0	1.67	83
13C-2,3,3',4,4',5,5'-HpCB	189	51.964	1.07	2.0	1.29	65
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.577	0.92	2.0	1.55	78
13C-2,3,3',4,4',5,5',6-OcCB	205	54.745	0.86	2.0	1.44	72
13C-2,2',3,3',4,4',5,5',6-NoCB	206	56.922	0.77	2.0	1.54	77
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.382	0.83	2.0	1.33	67
13C--DeCB	209	59.250	0.72	2.0	1.42	71
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.783	1.06	2.0	1.38	69
13C-2,3,3',5,5'-PeCB	111	36.276	1.56	2.0	1.20	60
13C-2,2',3,3',5,5',6-HpCB	178	42.262	1.07	2.0	1.39	70
Recovery Standards						
13C-2,5-DiCB	9	14.907	1.56	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.896	0.78	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	33.442	1.56	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.826	1.31	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.184	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 PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		8.390	3.20	378	---	24.5
2		11.457	3.08	154	---	24.5
3		11.720	3.11	340	---	24.5
4		12.068	1.56	2820	---	24.5
5		15.902	1.54	111	---	24.5
6		15.494	1.54	1340	---	24.5
7		15.147	1.53	228	---	24.5
8		16.082	1.58	6050	---	24.5
9		14.931	1.57	383	---	24.5
10		12.319	1.57	196	---	24.5
11		19.341	1.55	1050	---	147
12	12/13	19.700	1.51	998	---	48.9
13	12/13	19.700	1.51	(998)	---	48.9
14		---	---	ND	---	24.5
15		20.132	1.54	9910	---	24.5
16		20.024	1.05	7280	---	24.5
17		19.461	1.05	6870	---	24.5
18	18/30	18.921	1.04	13900	---	48.9
19		16.453	1.06	2140	---	24.5
20	20/28	23.799	1.03	31700	---	48.9
21	21/33	24.068	1.04	16100	---	48.9
22		24.537	1.03	12000	---	24.5
23		22.441	0.99	30.0	---	24.5
24		---	---	ND	---	24.5
25		23.095	1.04	2190	---	24.5
26	26/29	22.810	1.03	5250	---	48.9
27		19.724	1.04	1740	---	24.5
28	20/28	23.799	1.03	(31700)	---	48.9
29	26/29	22.810	1.03	(5250)	---	48.9
30	18/30	18.921	1.04	(13900)	---	48.9
31		23.464	1.04	26900	---	24.5
32		20.697	1.03	7050	---	24.5
33	21/33	24.068	1.04	(16100)	---	48.9
34		22.257	1.01	80.5	---	24.5
35		27.941	1.01	713	---	24.5
36		---	---	ND	---	24.5
37		28.394	1.03	11000	---	24.5
38		27.422	1.05	35.5	---	24.5
39		26.801	1.01	155	---	24.5
40	40/41/71	28.176	0.79	20500	---	147
41	40/41/71	28.176	0.79	(20500)	---	147
42		27.623	0.79	9830	---	48.9
43	43/73	26.181	0.79	909	---	97.8
44	44/47/65	27.036	0.79	36200	---	147
45	45/51	23.866	0.79	7010	---	97.8
46		24.235	0.77	2530	---	48.9
47	44/47/65	27.036	0.79	(36200)	---	147
48		26.784	0.79	6700	---	48.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
49	49/69	26.483	0.79	19400	---	97.8
50	50/53	23.078	0.78	4820	---	97.8
51	45/51	23.866	0.79	(7010)	---	97.8
52		25.929	0.79	50700	---	48.9
53	50/53	23.078	0.78	(4820)	---	97.8
54		20.429	0.80	64.2	---	48.9
55		---	---	ND	---	48.9
56		32.318	0.77	8500	---	48.9
57		30.155	0.70	217	---	48.9
58		30.390	0.59 I	---	88.2	48.9
59	59/62/75	27.405	0.79	3150	---	147
60		32.553	0.77	4650	---	48.9
61	61/70/74/76	31.262	0.76	42000	---	196
62	59/62/75	27.405	0.79	(3150)	---	147
63		30.893	0.78	941	---	48.9
64		28.428	0.79	15400	---	48.9
65	44/47/65	27.036	0.79	(36200)	---	147
66		31.614	0.79	19700	---	48.9
67		30.608	0.76	809	---	48.9
68		29.702	0.74	71.0	---	48.9
69	49/69	26.483	0.79	(19400)	---	97.8
70	61/70/74/76	31.262	0.76	(42000)	---	196
71	40/41/71	28.176	0.79	(20500)	---	147
72		29.383	0.79	144	---	48.9
73	43/73	26.181	0.79	(909)	---	97.8
74	61/70/74/76	31.262	0.76	(42000)	---	196
75	59/62/75	27.405	0.79	(3150)	---	147
76	61/70/74/76	31.262	0.76	(42000)	---	196
77		36.292	0.77	2080	---	48.9
78		---	---	ND	---	48.9
79		34.582	0.71	331	---	48.9
80		---	---	ND	---	48.9
81		35.689	0.91 I	---	95.2	48.9
82		35.856	1.56	6960	---	48.9
83		33.928	1.59	3570	---	48.9
84		31.446	1.58	16100	---	48.9
85	85/116/117	35.337	1.56	7750	---	147
86	86/87/97/108/119/125	34.683	1.56	38800	---	293
87	86/87/97/108/119/125	34.683	1.56	(38800)	---	293
88	88/91	31.211	1.58	7100	---	97.8
89		31.949	1.57	581	---	48.9
90	90/101/113	33.475	1.59	52200	---	147
91	88/91	31.211	1.58	(7100)	---	97.8
92		32.838	1.56	9830	---	48.9
93	93/98/100/102	30.658	1.54	1890	---	196
94		29.786	1.58	258	---	48.9
95		30.272	1.57	49300	---	48.9
96		27.371	1.57	485	---	48.9

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
97	86/87/97/108/119/125	34.683	1.56	(38800)	---	293
98	93/98/100/102	30.658	1.54	(1890)	---	196
99		34.062	1.57	18000	---	48.9
100	93/98/100/102	30.658	1.54	(1890)	---	196
101	90/101/113	33.475	1.59	(52200)	---	147
102	93/98/100/102	30.658	1.54	(1890)	---	196
103		29.568	1.54	246	---	48.9
104		---	---	ND	---	48.9
105		39.881	1.52	20900	---	48.9
106		---	---	ND	---	48.9
107	107/124	37.969	1.56	2010	---	97.8
108	86/87/97/108/119/125	34.683	1.56	(38800)	---	293
109		38.221	1.56	2540	---	48.9
110	110/115	35.538	1.56	58800	---	97.8
111		---	---	ND	---	48.9
112		---	---	ND	---	48.9
113	90/101/113	33.475	1.59	(52200)	---	147
114		39.227	1.58	1240	---	48.9
115	110/115	35.538	1.56	(58800)	---	97.8
116	85/116/117	35.337	1.56	(7750)	---	147
117	85/116/117	35.337	1.56	(7750)	---	147
118		38.674	1.56	46500	---	48.9
119	86/87/97/108/119/125	34.683	1.56	(38800)	---	293
120		---	---	ND	---	48.9
121		---	---	ND	---	48.9
122		39.009	1.65	517	---	48.9
123		38.322	1.44	924	---	48.9
124	107/124	37.969	1.56	(2010)	---	97.8
125	86/87/97/108/119/125	34.683	1.56	(38800)	---	293
126		43.051	2.05 I	---	119	48.9
127		41.407	1.44	73.5	---	48.9
128	128/166	43.118	1.36	9180	---	97.8
129	129/138/163	41.860	1.23	54400	---	147
130		41.189	1.23	3920	---	48.9
131		38.271	1.21	1070	---	48.9
132		38.741	1.23	19400	---	48.9
133		39.277	1.25	625	---	48.9
134	134/143	37.651	1.24	2870	---	97.8
135	135/151	36.494	1.25	13300	---	97.8
136		33.945	1.25	6580	---	48.9
137		41.407	1.24	3110	---	48.9
138	129/138/163	41.860	1.23	(54400)	---	147
139	139/140	38.070	1.22	1050	---	97.8
140	139/140	38.070	1.22	(1050)	---	97.8
141		40.770	1.22	7980	---	48.9
142		---	---	ND	---	48.9
143	134/143	37.651	1.24	(2870)	---	97.8
144		37.081	1.25	2220	---	48.9

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

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

Pace Analytical Services, Inc.
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 PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
145		---	---	ND	---	48.9
146		39.948	1.25	5980	---	48.9
147	147/149	37.450	1.25	32800	---	97.8
148		---	---	ND	---	48.9
149	147/149	37.450	1.25	(32800)	---	97.8
150		33.559	1.32	49.3	---	48.9
151	135/151	36.494	1.25	(13300)	---	97.8
152		33.358	1.32	53.9	---	48.9
153	153/168	40.585	1.23	34300	---	97.8
154		36.745	1.43	286	---	48.9
155		---	---	ND	---	48.9
156	156/157	46.069	1.24	8210	---	97.8
157	156/157	46.069	1.24	(8210)	---	97.8
158		42.246	1.24	5560	---	48.9
159		---	---	ND	---	48.9
160		---	---	ND	---	48.9
161		---	---	ND	---	48.9
162		44.459	1.25	283	---	48.9
163	129/138/163	41.860	1.23	(54400)	---	147
164		41.524	1.25	3250	---	48.9
165		---	---	ND	---	48.9
166	128/166	43.118	1.36	(9180)	---	97.8
167		44.929	1.26	2520	---	48.9
168	153/168	40.585	1.23	(34300)	---	97.8
169		---	---	ND	---	48.9
170		48.752	1.02	6640	---	48.9
171	171/173	45.147	1.00	2060	---	97.8
172		46.807	1.03	1080	---	48.9
173	171/173	45.147	1.00	(2060)	---	97.8
174		44.057	1.02	5150	---	48.9
175		42.916	1.05	285	---	48.9
176		40.384	1.02	814	---	48.9
177		44.510	1.04	3340	---	48.9
178		42.279	1.02	1070	---	48.9
179		39.479	1.04	2210	---	48.9
180	180/193	47.478	1.04	11300	---	97.8
181		44.929	1.08	111	---	48.9
182		---	---	ND	---	48.9
183	183/185	43.822	1.09	4110	---	97.8
184		---	---	ND	---	48.9
185	183/185	43.822	1.09	(4110)	---	97.8
186		---	---	ND	---	48.9
187		43.201	1.04	5760	---	48.9
188		---	---	ND	---	48.9
189		51.964	1.02	333	---	48.9
190		49.306	1.02	1190	---	48.9
191		47.847	1.05	251	---	48.9
192		---	---	ND	---	48.9

Conc = Concentration
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RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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 PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
193	180/193	47.478	1.04	(11300)	---	97.8
194		54.206	0.90	2220	---	73.4
195		51.684	0.89	789	---	73.4
196		50.110	0.89	1220	---	73.4
197	197/200	46.572	0.92	386	---	147
198	198/199	49.456	0.89	2690	---	147
199	198/199	49.456	0.89	(2690)	---	147
200	197/200	46.572	0.92	(386)	---	147
201		45.549	0.91	341	---	73.4
202		44.610	0.91	559	---	73.4
203		50.312	0.89	1630	---	73.4
204		---	---	ND	---	73.4
205		54.766	0.83	118	---	73.4
206		56.965	0.77	1930	---	73.4
207		52.352	0.79	218	---	73.4
208		51.382	0.77	527	---	73.4
209		59.271	0.69	652	---	73.4

Conc = Concentration
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NA = Not Applicable
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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTI0293-06 (FO105879)
Lab Sample ID 10138001006
Filename P101008A_05

Congener Group	Concentration ng/Kg
Total Monochloro Biphenyls	872
Total Dichloro Biphenyls	23100
Total Trichloro Biphenyls	145000
Total Tetrachloro Biphenyls	257000
Total Pentachloro Biphenyls	347000
Total Hexachloro Biphenyls	219000
Total Heptachloro Biphenyls	45700
Total Octachloro Biphenyls	9950
Total Nonachloro Biphenyls	2680
Decachloro Biphenyls	652
Total PCBs	1050000

ND = Not Detected
Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26482		
Filename	P100930B_09		
Injected By	BAL	Matrix	Solid
Total Amount Extracted	10.4 g	Extracted	09/29/2010 14:40
ICAL ID	P100930B02	Analyzed	09/30/2010 22:55
CCal Filename(s)	P100930B_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes							
13C-2-MoCB	1	9.061	3.18	2.0	1.30	65	
13C-4-MoCB	3	12.487	3.06	2.0	1.42	71	
13C-2,2'-DiCB	4	12.834	1.59	2.0	1.62	81	
13C-4,4'-DiCB	15	21.006	1.54	2.0	1.43	71	
13C-2,2',6-TrCB	19	17.279	1.08	2.0	1.67	83	
13C-3,4,4'-TrCB	37	29.359	1.06	2.0	1.49	74	
13C-2,2',6,6'-TeCB	54	21.310	0.79	2.0	1.54	77	
13C-3,4,4',5-TeCB	81	36.837	0.82	2.0	0.553	28	
13C-3,3',4,4'-TeCB	77	37.441	0.80	2.0	0.540	27	
13C-2,2',4,6,6'-PeCB	104	27.883	1.58	2.0	4.44	222	R
13C-2,3,3',4,4'-PeCB	105	41.046	1.60	2.0	1.43	71	
13C-2,3,4,4',5-PeCB	114	40.375	1.56	2.0	1.37	68	
13C-2,3',4,4',5-PeCB	118	39.839	1.66	2.0	1.26	63	
13C-2,3',4,4',5'-PeCB	123	39.504	1.52	2.0	1.29	65	
13C-3,3',4,4',5-PeCB	126	44.165	1.49	2.0	2.07	103	
13C-2,2',4,4',6,6'-HxCB	155	34.255	1.23	2.0	1.58	79	
13C-HxCB (156/157)	156/157	47.116	1.26	4.0	5.41	135	
13C-2,3',4,4',5,5'-HxCB	167	45.959	1.24	2.0	2.45	122	
13C-3,3',4,4',5,5'-HxCB	169	50.386	1.26	2.0	2.90	145	
13C-2,2',3,4',5,6,6'-HpCB	188	40.275	1.09	2.0	0.770	38	
13C-2,3,3',4,4',5,5'-HpCB	189	52.896	1.06	2.0	1.77	89	
13C-2,2',3,3',5,5',6,6'-OcCB	202	45.641	0.91	2.0	1.58	79	
13C-2,3,3',4,4',5,5',6-OcCB	205	55.827	0.90	2.0	1.82	91	
13C-2,2',3,3',4,4',5,5',6-NoCB	206	58.177	0.77	2.0	1.88	94	
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	52.314	0.79	2.0	1.85	92	
13C--DeCB	209	60.634	0.69	2.0	1.77	88	
Cleanup Standards							
13C-2,4,4'-TrCB	28	24.714	1.05	2.0	1.65	83	
13C-2,3,3',5,5'-PeCB	111	37.458	1.60	2.0	1.34	67	
13C-2,2',3,3',5,5',6-HpCB	178	43.377	1.08	2.0	2.06	103	
Recovery Standards							
13C-2,5-DiCB	9	15.734	1.57	2.0	NA	NA	
13C-2,2',5,5'-TeCB	52	26.844	0.79	2.0	NA	NA	
13C-2,2',4,5,5'-PeCB	101	34.523	1.62	2.0	NA	NA	
13C-2,2',3,4,4',5'-HxCB	138	42.941	1.25	2.0	NA	NA	
13C-2,2',3,3',4,4',5,5'-OcCB	194	55.224	0.91	2.0	NA	NA	

Conc = Concentration
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ND = Not Detected
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* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26482
Filename P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	24.1
2		---	---	ND	---	24.1
3		---	---	ND	---	24.1
4		---	---	ND	---	24.1
5		---	---	ND	---	24.1
6		---	---	ND	---	24.1
7		---	---	ND	---	24.1
8		---	---	ND	---	24.1
9		---	---	ND	---	24.1
10		---	---	ND	---	24.1
11		---	---	ND	---	144
12	12/13	---	---	ND	---	48.1
13	12/13	---	---	ND	---	48.1
14		---	---	ND	---	24.1
15		---	---	ND	---	24.1
16		---	---	ND	---	24.1
17		---	---	ND	---	24.1
18	18/30	---	---	ND	---	48.1
19		---	---	ND	---	24.1
20	20/28	---	---	ND	---	48.1
21	21/33	---	---	ND	---	48.1
22		---	---	ND	---	24.1
23		---	---	ND	---	24.1
24		---	---	ND	---	24.1
25		---	---	ND	---	24.1
26	26/29	---	---	ND	---	48.1
27		---	---	ND	---	24.1
28	20/28	---	---	ND	---	48.1
29	26/29	---	---	ND	---	48.1
30	18/30	---	---	ND	---	48.1
31		---	---	ND	---	24.1
32		---	---	ND	---	24.1
33	21/33	---	---	ND	---	48.1
34		---	---	ND	---	24.1
35		---	---	ND	---	24.1
36		---	---	ND	---	24.1
37		---	---	ND	---	24.1
38		---	---	ND	---	24.1
39		---	---	ND	---	24.1
40	40/41/71	---	---	ND	---	144
41	40/41/71	---	---	ND	---	144
42		---	---	ND	---	48.1
43	43/73	---	---	ND	---	96.2
44	44/47/65	---	---	ND	---	144
45	45/51	---	---	ND	---	96.2

Conc = Concentration
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R = Recovery outside of Method 1668A control limits
ng/L = Nanograms per liter

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RT = Retention Time
I = Interference

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26482
Filename P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46		---	---	ND	---	48.1
47	44/47/65	---	---	ND	---	144
48		---	---	ND	---	48.1
49	49/69	---	---	ND	---	96.2
50	50/53	---	---	ND	---	96.2
51	45/51	---	---	ND	---	96.2
52		---	---	ND	---	48.1
53	50/53	---	---	ND	---	96.2
54		---	---	ND	---	48.1
55		---	---	ND	---	48.1
56		---	---	ND	---	48.1
57		---	---	ND	---	48.1
58		---	---	ND	---	48.1
59	59/62/75	---	---	ND	---	144
60		---	---	ND	---	48.1
61	61/70/74/76	---	---	ND	---	192
62	59/62/75	---	---	ND	---	144
63		---	---	ND	---	48.1
64		---	---	ND	---	48.1
65	44/47/65	---	---	ND	---	144
66		---	---	ND	---	48.1
67		---	---	ND	---	48.1
68		---	---	ND	---	48.1
69	49/69	---	---	ND	---	96.2
70	61/70/74/76	---	---	ND	---	192
71	40/41/71	---	---	ND	---	144
72		---	---	ND	---	48.1
73	43/73	---	---	ND	---	96.2
74	61/70/74/76	---	---	ND	---	192
75	59/62/75	---	---	ND	---	144
76	61/70/74/76	---	---	ND	---	192
77		---	---	ND	---	48.1
78		---	---	ND	---	48.1
79		---	---	ND	---	48.1
80		---	---	ND	---	48.1
81		---	---	ND	---	48.1
82		---	---	ND	---	48.1
83		---	---	ND	---	48.1
84		---	---	ND	---	48.1
85	85/116/117	---	---	ND	---	144
86	86/87/97/108/119/125	---	---	ND	---	289
87	86/87/97/108/119/125	---	---	ND	---	289
88	88/91	---	---	ND	---	96.2
89		---	---	ND	---	48.1
90	90/101/113	---	---	ND	---	144

Conc = Concentration
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X = Outside QC Limits
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I = Interference

Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26482
Filename P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91	---	---	ND	---	96.2
92		---	---	ND	---	48.1
93	93/98/100/102	---	---	ND	---	192
94		---	---	ND	---	48.1
95		---	---	ND	---	48.1
96		---	---	ND	---	48.1
97	86/87/97/108/119/125	---	---	ND	---	289
98	93/98/100/102	---	---	ND	---	192
99		---	---	ND	---	48.1
100	93/98/100/102	---	---	ND	---	192
101	90/101/113	---	---	ND	---	144
102	93/98/100/102	---	---	ND	---	192
103		---	---	ND	---	48.1
104		---	---	ND	---	48.1
105		---	---	ND	---	48.1
106		---	---	ND	---	48.1
107	107/124	---	---	ND	---	96.2
108	86/87/97/108/119/125	---	---	ND	---	289
109		---	---	ND	---	48.1
110	110/115	---	---	ND	---	96.2
111		---	---	ND	---	48.1
112		---	---	ND	---	48.1
113	90/101/113	---	---	ND	---	144
114		---	---	ND	---	48.1
115	110/115	---	---	ND	---	96.2
116	85/116/117	---	---	ND	---	144
117	85/116/117	---	---	ND	---	144
118		---	---	ND	---	48.1
119	86/87/97/108/119/125	---	---	ND	---	289
120		---	---	ND	---	48.1
121		---	---	ND	---	48.1
122		---	---	ND	---	48.1
123		---	---	ND	---	48.1
124	107/124	---	---	ND	---	96.2
125	86/87/97/108/119/125	---	---	ND	---	289
126		---	---	ND	---	48.1
127		---	---	ND	---	48.1
128	128/166	---	---	ND	---	96.2
129	129/138/163	---	---	ND	---	144
130		---	---	ND	---	48.1
131		---	---	ND	---	48.1
132		---	---	ND	---	48.1
133		---	---	ND	---	48.1
134	134/143	---	---	ND	---	96.2
135	135/151	---	---	ND	---	96.2

Conc = Concentration
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REPORT OF LABORATORY ANALYSIS

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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-26482
Filename P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136		---	---	ND	---	48.1
137		---	---	ND	---	48.1
138	129/138/163	---	---	ND	---	144
139	139/140	---	---	ND	---	96.2
140	139/140	---	---	ND	---	96.2
141		---	---	ND	---	48.1
142		---	---	ND	---	48.1
143	134/143	---	---	ND	---	96.2
144		---	---	ND	---	48.1
145		---	---	ND	---	48.1
146		---	---	ND	---	48.1
147	147/149	---	---	ND	---	96.2
148		---	---	ND	---	48.1
149	147/149	---	---	ND	---	96.2
150		---	---	ND	---	48.1
151	135/151	---	---	ND	---	96.2
152		---	---	ND	---	48.1
153	153/168	---	---	ND	---	96.2
154		---	---	ND	---	48.1
155		---	---	ND	---	48.1
156	156/157	---	---	ND	---	96.2
157	156/157	---	---	ND	---	96.2
158		---	---	ND	---	48.1
159		---	---	ND	---	48.1
160		---	---	ND	---	48.1
161		---	---	ND	---	48.1
162		---	---	ND	---	48.1
163	129/138/163	---	---	ND	---	144
164		---	---	ND	---	48.1
165		---	---	ND	---	48.1
166	128/166	---	---	ND	---	96.2
167		---	---	ND	---	48.1
168	153/168	---	---	ND	---	96.2
169		---	---	ND	---	48.1
170		---	---	ND	---	48.1
171	171/173	---	---	ND	---	96.2
172		---	---	ND	---	48.1
173	171/173	---	---	ND	---	96.2
174		---	---	ND	---	48.1
175		---	---	ND	---	48.1
176		---	---	ND	---	48.1
177		---	---	ND	---	48.1
178		---	---	ND	---	48.1
179		---	---	ND	---	48.1
180	180/193	---	---	ND	---	96.2

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 dry weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26482
Filename P100930B_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
181		---	---	ND	---	48.1
182		---	---	ND	---	48.1
183	183/185	---	---	ND	---	96.2
184		---	---	ND	---	48.1
185	183/185	---	---	ND	---	96.2
186		---	---	ND	---	48.1
187		---	---	ND	---	48.1
188		---	---	ND	---	48.1
189		---	---	ND	---	48.1
190		---	---	ND	---	48.1
191		---	---	ND	---	48.1
192		---	---	ND	---	48.1
193	180/193	---	---	ND	---	96.2
194		---	---	ND	---	72.2
195		---	---	ND	---	72.2
196		---	---	ND	---	72.2
197	197/200	---	---	ND	---	144
198	198/199	---	---	ND	---	144
199	198/199	---	---	ND	---	144
200	197/200	---	---	ND	---	144
201		---	---	ND	---	72.2
202		---	---	ND	---	72.2
203		---	---	ND	---	72.2
204		---	---	ND	---	72.2
205		---	---	ND	---	72.2
206		---	---	ND	---	72.2
207		---	---	ND	---	72.2
208		---	---	ND	---	72.2
209		---	---	ND	---	72.2

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 dry weight basis

REPORT OF LABORATORY ANALYSIS

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

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

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	DFBLKNV
Lab Sample ID	BLANK-26482
Filename	P100930B_09

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
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a dry weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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-26574		
Filename	P101008A_04		
Injected By	BAL	Matrix	Solid
Total Amount Extracted	10.4 g	Extracted	10/06/2010 16:40
ICAL ID	P101008A02	Analyzed	10/08/2010 16:25
CCal Filename(s)	P101008A_01	Dilution	NA

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	8.390	3.12	2.0	1.32	66
13C-4-MoCB	3	11.733	3.11	2.0	1.46	73
13C-2,2'-DiCB	4	12.057	1.58	2.0	1.45	73
13C-4,4'-DiCB	15	20.109	1.54	2.0	1.32	66
13C-2,2',6-TrCB	19	16.442	1.04	2.0	1.49	75
13C-3,4,4'-TrCB	37	28.412	1.11	2.0	1.40	70
13C-2,2',6,6'-TeCB	54	20.413	0.79	2.0	1.56	78
13C-3,4,4',5-TeCB	81	35.823	0.83	2.0	0.787	39
13C-3,3',4,4'-TeCB	77	36.410	0.79	2.0	0.808	40
13C-2,2',4,6,6'-PeCB	104	26.953	1.59	2.0	2.87	144
13C-2,3,3',4,4'-PeCB	105	39.999	1.61	2.0	1.42	71
13C-2,3,4,4',5-PeCB	114	39.345	1.57	2.0	1.43	72
13C-2,3',4,4',5-PeCB	118	38.792	1.62	2.0	1.36	68
13C-2,3',4,4',5'-PeCB	123	38.473	1.61	2.0	1.40	70
13C-3,3',4,4',5-PeCB	126	43.118	1.54	2.0	1.79	90
13C-2,2',4,4',6,6'-HxCB	155	33.274	1.22	2.0	1.55	77
13C-HxCB (156/157)	156/157	46.086	1.27	4.0	4.10	103
13C-2,3',4,4',5,5'-HxCB	167	44.929	1.24	2.0	1.94	97
13C-3,3',4,4',5,5'-HxCB	169	49.339	1.26	2.0	2.36	118
13C-2,2',3,4',5,6,6'-HpCB	188	39.261	1.07	2.0	0.960	48
13C-2,3,3',4,4',5,5'-HpCB	189	51.835	1.06	2.0	1.64	82
13C-2,2',3,3',5,5',6,6'-OcCB	202	44.627	0.92	2.0	1.37	68
13C-2,3,3',4,4',5,5',6-OcCB	205	54.594	0.87	2.0	1.73	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	56.749	0.80	2.0	1.59	79
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	51.275	0.80	2.0	1.63	82
13C--DeCB	209	59.013	0.70	2.0	1.44	72
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.784	1.03	2.0	1.61	80
13C-2,3,3',5,5'-PeCB	111	36.461	1.57	2.0	1.39	69
13C-2,2',3,3',5,5',6-HpCB	178	42.363	1.02	2.0	1.80	90
Recovery Standards						
13C-2,5-DiCB	9	14.968	1.57	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.913	0.79	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	33.543	1.60	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.927	1.27	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.034	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 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

Pace Analytical Services, Inc.
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-26574
Filename P101008A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
1		---	---	ND	---	24.0
2		---	---	ND	---	24.0
3		---	---	ND	---	24.0
4		---	---	ND	---	24.0
5		---	---	ND	---	24.0
6		---	---	ND	---	24.0
7		---	---	ND	---	24.0
8		---	---	ND	---	24.0
9		---	---	ND	---	24.0
10		---	---	ND	---	24.0
11		---	---	ND	---	144
12	12/13	---	---	ND	---	48.0
13	12/13	---	---	ND	---	48.0
14		---	---	ND	---	24.0
15		---	---	ND	---	24.0
16		---	---	ND	---	24.0
17		---	---	ND	---	24.0
18	18/30	---	---	ND	---	48.0
19		---	---	ND	---	24.0
20	20/28	---	---	ND	---	48.0
21	21/33	---	---	ND	---	48.0
22		---	---	ND	---	24.0
23		---	---	ND	---	24.0
24		---	---	ND	---	24.0
25		---	---	ND	---	24.0
26	26/29	---	---	ND	---	48.0
27		---	---	ND	---	24.0
28	20/28	---	---	ND	---	48.0
29	26/29	---	---	ND	---	48.0
30	18/30	---	---	ND	---	48.0
31		---	---	ND	---	24.0
32		---	---	ND	---	24.0
33	21/33	---	---	ND	---	48.0
34		---	---	ND	---	24.0
35		---	---	ND	---	24.0
36		---	---	ND	---	24.0
37		---	---	ND	---	24.0
38		---	---	ND	---	24.0
39		---	---	ND	---	24.0
40	40/41/71	---	---	ND	---	144
41	40/41/71	---	---	ND	---	144
42		---	---	ND	---	48.0
43	43/73	---	---	ND	---	96.1
44	44/47/65	---	---	ND	---	144
45	45/51	---	---	ND	---	96.1

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
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

Pace Analytical Services, Inc.
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-26574
Filename P101008A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
46		---	---	ND	---	48.0
47	44/47/65	---	---	ND	---	144
48		---	---	ND	---	48.0
49	49/69	---	---	ND	---	96.1
50	50/53	---	---	ND	---	96.1
51	45/51	---	---	ND	---	96.1
52		---	---	ND	---	48.0
53	50/53	---	---	ND	---	96.1
54		---	---	ND	---	48.0
55		---	---	ND	---	48.0
56		---	---	ND	---	48.0
57		---	---	ND	---	48.0
58		---	---	ND	---	48.0
59	59/62/75	---	---	ND	---	144
60		---	---	ND	---	48.0
61	61/70/74/76	---	---	ND	---	192
62	59/62/75	---	---	ND	---	144
63		---	---	ND	---	48.0
64		---	---	ND	---	48.0
65	44/47/65	---	---	ND	---	144
66		---	---	ND	---	48.0
67		---	---	ND	---	48.0
68		---	---	ND	---	48.0
69	49/69	---	---	ND	---	96.1
70	61/70/74/76	---	---	ND	---	192
71	40/41/71	---	---	ND	---	144
72		---	---	ND	---	48.0
73	43/73	---	---	ND	---	96.1
74	61/70/74/76	---	---	ND	---	192
75	59/62/75	---	---	ND	---	144
76	61/70/74/76	---	---	ND	---	192
77		---	---	ND	---	48.0
78		---	---	ND	---	48.0
79		---	---	ND	---	48.0
80		---	---	ND	---	48.0
81		---	---	ND	---	48.0
82		---	---	ND	---	48.0
83		---	---	ND	---	48.0
84		---	---	ND	---	48.0
85	85/116/117	---	---	ND	---	144
86	86/87/97/108/119/125	---	---	ND	---	288
87	86/87/97/108/119/125	---	---	ND	---	288
88	88/91	---	---	ND	---	96.1
89		---	---	ND	---	48.0
90	90/101/113	---	---	ND	---	144

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

Pace Analytical Services, Inc.
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-26574
Filename P101008A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
91	88/91	---	---	ND	---	96.1
92		---	---	ND	---	48.0
93	93/98/100/102	---	---	ND	---	192
94		---	---	ND	---	48.0
95		---	---	ND	---	48.0
96		---	---	ND	---	48.0
97	86/87/97/108/119/125	---	---	ND	---	288
98	93/98/100/102	---	---	ND	---	192
99		---	---	ND	---	48.0
100	93/98/100/102	---	---	ND	---	192
101	90/101/113	---	---	ND	---	144
102	93/98/100/102	---	---	ND	---	192
103		---	---	ND	---	48.0
104		---	---	ND	---	48.0
105		---	---	ND	---	48.0
106		---	---	ND	---	48.0
107	107/124	---	---	ND	---	96.1
108	86/87/97/108/119/125	---	---	ND	---	288
109		---	---	ND	---	48.0
110	110/115	---	---	ND	---	96.1
111		---	---	ND	---	48.0
112		---	---	ND	---	48.0
113	90/101/113	---	---	ND	---	144
114		---	---	ND	---	48.0
115	110/115	---	---	ND	---	96.1
116	85/116/117	---	---	ND	---	144
117	85/116/117	---	---	ND	---	144
118		---	---	ND	---	48.0
119	86/87/97/108/119/125	---	---	ND	---	288
120		---	---	ND	---	48.0
121		---	---	ND	---	48.0
122		---	---	ND	---	48.0
123		---	---	ND	---	48.0
124	107/124	---	---	ND	---	96.1
125	86/87/97/108/119/125	---	---	ND	---	288
126		---	---	ND	---	48.0
127		---	---	ND	---	48.0
128	128/166	---	---	ND	---	96.1
129	129/138/163	---	---	ND	---	144
130		---	---	ND	---	48.0
131		---	---	ND	---	48.0
132		---	---	ND	---	48.0
133		---	---	ND	---	48.0
134	134/143	---	---	ND	---	96.1
135	135/151	---	---	ND	---	96.1

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
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

Pace Analytical Services, Inc.
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-26574
Filename P101008A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
136		---	---	ND	---	48.0
137		---	---	ND	---	48.0
138	129/138/163	---	---	ND	---	144
139	139/140	---	---	ND	---	96.1
140	139/140	---	---	ND	---	96.1
141		---	---	ND	---	48.0
142		---	---	ND	---	48.0
143	134/143	---	---	ND	---	96.1
144		---	---	ND	---	48.0
145		---	---	ND	---	48.0
146		---	---	ND	---	48.0
147	147/149	---	---	ND	---	96.1
148		---	---	ND	---	48.0
149	147/149	---	---	ND	---	96.1
150		---	---	ND	---	48.0
151	135/151	---	---	ND	---	96.1
152		---	---	ND	---	48.0
153	153/168	---	---	ND	---	96.1
154		---	---	ND	---	48.0
155		---	---	ND	---	48.0
156	156/157	---	---	ND	---	96.1
157	156/157	---	---	ND	---	96.1
158		---	---	ND	---	48.0
159		---	---	ND	---	48.0
160		---	---	ND	---	48.0
161		---	---	ND	---	48.0
162		---	---	ND	---	48.0
163	129/138/163	---	---	ND	---	144
164		---	---	ND	---	48.0
165		---	---	ND	---	48.0
166	128/166	---	---	ND	---	96.1
167		---	---	ND	---	48.0
168	153/168	---	---	ND	---	96.1
169		---	---	ND	---	48.0
170		---	---	ND	---	48.0
171	171/173	---	---	ND	---	96.1
172		---	---	ND	---	48.0
173	171/173	---	---	ND	---	96.1
174		---	---	ND	---	48.0
175		---	---	ND	---	48.0
176		---	---	ND	---	48.0
177		---	---	ND	---	48.0
178		---	---	ND	---	48.0
179		---	---	ND	---	48.0
180	180/193	---	---	ND	---	96.1

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
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

Pace Analytical Services, Inc.
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-26574
Filename P101008A_04

IUPAC	Co-elutions	RT	Ratio	Concentration ng/Kg	EMPC ng/Kg	EML ng/Kg
181		---	---	ND	---	48.0
182		---	---	ND	---	48.0
183	183/185	---	---	ND	---	96.1
184		---	---	ND	---	48.0
185	183/185	---	---	ND	---	96.1
186		---	---	ND	---	48.0
187		---	---	ND	---	48.0
188		---	---	ND	---	48.0
189		---	---	ND	---	48.0
190		---	---	ND	---	48.0
191		---	---	ND	---	48.0
192		---	---	ND	---	48.0
193	180/193	---	---	ND	---	96.1
194		---	---	ND	---	72.0
195		---	---	ND	---	72.0
196		---	---	ND	---	72.0
197	197/200	---	---	ND	---	144
198	198/199	---	---	ND	---	144
199	198/199	---	---	ND	---	144
200	197/200	---	---	ND	---	144
201		---	---	ND	---	72.0
202		---	---	ND	---	72.0
203		---	---	ND	---	72.0
204		---	---	ND	---	72.0
205		---	---	ND	---	72.0
206		---	---	ND	---	72.0
207		---	---	ND	---	72.0
208		---	---	ND	---	72.0
209		---	---	ND	---	72.0

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

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

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

Method 1668A Polychlorobiphenyl
Blank Analysis Results

Client Sample ID	DFBLKOO
Lab Sample ID	BLANK-26574
Filename	P101008A_04

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
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected
Results reported on a total weight basis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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	LCS-26483		
Filename	P100930B_10	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	P100930B02	Extracted	09/29/2010 14:40
CCal Filename(s)	P100930B_01	Analyzed	10/01/2010 00:01
Method Blank ID	BLANK-26482	Injected By	BAL

	Native Analytes			Labeled Analytes			
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**	
1	1.0	0.990	99	2.0	1.47	73	
3	1.0	1.06	106	2.0	1.54	77	
4	1.0	0.979	98	2.0	1.72	86	
15	1.0	1.14	114	2.0	1.41	70	
19	1.0	0.876	88	2.0	1.66	83	
37	1.0	0.992	99	2.0	1.52	76	
54	1.0	0.962	96	2.0	1.59	79	
81	1.0	1.06	106	2.0	0.680	34	
77	1.0	0.953	95	2.0	0.663	33	
104	1.0	0.955	96	2.0	3.37	169	R
105	1.0	1.02	102	2.0	1.39	69	
114	1.0	1.09	109	2.0	1.31	66	
118	1.0	1.14	114	2.0	1.24	62	
123	1.0	1.06	106	2.0	1.22	61	
126	1.0	1.01	101	2.0	1.95	97	
155	1.0	0.955	96	2.0	1.66	83	
156/157	2.0	2.11	105	4.0	4.28	107	
167	1.0	1.06	106	2.0	2.11	106	
169	1.0	1.05	105	2.0	2.24	112	
188	1.0	1.02	102	2.0	0.939	47	
189	1.0	1.06	106	2.0	1.66	83	
202	1.0	0.970	97	2.0	1.79	90	
205	1.0	1.01	101	2.0	1.75	88	
206	1.0	0.978	98	2.0	1.80	90	
208	1.0	1.03	103	2.0	1.73	86	
209	1.0	1.32	132	2.0	1.62	81	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-26575		
Filename	P101009A_04	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	P101009A02	Extracted	10/06/2010 16:40
CCal Filename(s)	P101009A_01	Analyzed	10/09/2010 04:14
Method Blank ID	BLANK-26574	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	1.11	111	2.0	1.34	67
3	1.0	1.13	113	2.0	1.52	76
4	1.0	0.992	99	2.0	1.45	72
15	1.0	1.13	113	2.0	1.71	85
19	1.0	1.01	101	2.0	1.36	68
37	1.0	1.07	107	2.0	1.71	85
54	1.0	0.983	98	2.0	1.67	83
81	1.0	1.04	104	2.0	1.01	51
77	1.0	1.01	101	2.0	1.05	53
104	1.0	1.02	102	2.0	2.13	107
105	1.0	1.10	110	2.0	1.42	71
114	1.0	1.03	103	2.0	1.39	69
118	1.0	1.24	124	2.0	1.32	66
123	1.0	1.10	110	2.0	1.36	68
126	1.0	1.04	104	2.0	1.72	86
155	1.0	1.00	100	2.0	1.62	81
156/157	2.0	2.17	109	4.0	3.40	85
167	1.0	1.10	110	2.0	1.70	85
169	1.0	1.03	103	2.0	1.70	85
188	1.0	1.00	100	2.0	1.45	73
189	1.0	1.08	108	2.0	1.70	85
202	1.0	0.979	98	2.0	1.92	96
205	1.0	1.05	105	2.0	1.66	83
206	1.0	1.02	102	2.0	1.77	89
208	1.0	0.983	98	2.0	1.65	82
209	1.0	1.21	121	2.0	1.63	81

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-26484		
Filename	P100930B_11	Matrix	Solid
Total Amount Extracted	10.4 g	Dilution	NA
ICAL ID	P100930B02	Extracted	09/29/2010 14:40
CCal Filename(s)	P100930B_01	Analyzed	10/01/2010 01:06
Method Blank ID	BLANK-26482	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	1.42	71	
3	1.0	1.05	105	2.0	1.53	76	
4	1.0	1.06	106	2.0	1.71	85	
15	1.0	1.11	111	2.0	1.44	72	
19	1.0	0.977	98	2.0	1.58	79	
37	1.0	1.02	102	2.0	1.60	80	
54	1.0	0.984	98	2.0	1.62	81	
81	1.0	1.07	107	2.0	0.736	37	
77	1.0	0.989	99	2.0	0.698	35	
104	1.0	0.943	94	2.0	3.48	174	R
105	1.0	1.09	109	2.0	1.46	73	
114	1.0	1.07	107	2.0	1.37	68	
118	1.0	1.14	114	2.0	1.29	64	
123	1.0	1.09	109	2.0	1.30	65	
126	1.0	1.01	101	2.0	2.02	101	
155	1.0	1.01	101	2.0	1.64	82	
156/157	2.0	2.18	109	4.0	4.30	108	
167	1.0	1.10	110	2.0	2.13	107	
169	1.0	1.06	106	2.0	2.31	115	
188	1.0	1.05	105	2.0	0.981	49	
189	1.0	1.07	107	2.0	1.81	90	
202	1.0	0.960	96	2.0	1.96	98	
205	1.0	1.01	101	2.0	1.86	93	
206	1.0	0.990	99	2.0	1.95	97	
208	1.0	0.976	98	2.0	1.88	94	
209	1.0	1.36	136	2.0	1.78	89	

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Method 1668A Polychlorobiphenyls
Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-26576		
Filename	P101009A_05	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	P101009A02	Extracted	10/06/2010 16:40
CCal Filename(s)	P101009A_01	Analyzed	10/09/2010 05:19
Method Blank ID	BLANK-26574	Injected By	BAL

	Native Analytes			Labeled Analytes		
PCB Isomer	**Spiked (ng)**	**Found (ng)**	**% Recovery**	**Spiked (ng)**	**Found (ng)**	**% Recovery**
1	1.0	1.14	114	2.0	1.45	73
3	1.0	1.19	119	2.0	1.59	79
4	1.0	1.02	102	2.0	1.53	77
15	1.0	0.991	99	2.0	1.48	74
19	1.0	1.01	101	2.0	1.43	72
37	1.0	1.09	109	2.0	1.62	81
54	1.0	1.01	101	2.0	1.26	63
81	1.0	1.05	105	2.0	0.925	46
77	1.0	1.02	102	2.0	0.957	48
104	1.0	1.01	101	2.0	2.54	127
105	1.0	1.11	111	2.0	1.24	62
114	1.0	1.08	108	2.0	1.34	67
118	1.0	1.19	119	2.0	1.34	67
123	1.0	1.15	115	2.0	1.33	66
126	1.0	1.07	107	2.0	1.26	63
155	1.0	1.01	101	2.0	2.04	102
156/157	2.0	2.21	111	4.0	3.64	91
167	1.0	1.11	111	2.0	1.76	88
169	1.0	1.09	109	2.0	2.14	107
188	1.0	0.994	99	2.0	1.36	68
189	1.0	1.07	107	2.0	1.68	84
202	1.0	1.03	103	2.0	1.23	61
205	1.0	0.997	100	2.0	1.71	85
206	1.0	0.979	98	2.0	1.71	85
208	1.0	1.04	104	2.0	1.56	78
209	1.0	1.28	128	2.0	1.84	92

R = Recovery outside of method 1668A control limits
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Method 1668A

Spike Recovery Relative Percent Difference (RPD) Results

Client	Test America		
Spike 1 ID	LCS-26483	Spike 2 ID	LCSD-26484
Spike 1 Filename	P100930B_10	Spike 2 Filename	P100930B_11

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	99	104	4.9
4-MoCB	3	106	105	0.9
2,2'-DiCB	4	98	106	7.8
4,4'-DiCB	15	114	111	2.7
2,2',6-TrCB	19	88	98	10.8
3,4,4'-TrCB	37	99	102	3.0
2,2',6,6'-TeCB	54	96	98	2.1
3,3',4,4'-TeCB	77	95	99	4.1
3,4,4',5-TeCB	81	106	107	0.9
2,2',4,6,6'-PeCB	104	96	94	2.1
2,3,3',4,4'-PeCB	105	102	109	6.6
2,3,4,4',5-PeCB	114	109	107	1.9
2,3',4,4',5-PeCB	118	114	114	0.0
2,3',4,4',5'-PeCB	123	106	109	2.8
3,3',4,4',5-PeCB	126	101	101	0.0
2,2',4,4',6,6'-HxCB	155	96	101	5.1
(156/157)	156/157	105	109	3.7
2,3',4,4',5,5'-HxCB	167	106	110	3.7
3,3',4,4',5,5'-HxCB	169	105	106	0.9
2,2',3,4',5,6,6'-HpCB	188	102	105	2.9
2,3,3',4,4',5,5'-HpCB	189	106	107	0.9
2,2',3,3',5,5',6,6'-OcCB	202	97	96	1.0
2,3,3',4,4',5,5',6-OcCB	205	101	101	0.0
2,2',3,3',4,4',5,5',6-NoCB	206	98	99	1.0
2,2',3,3',4,5,5',6,6'-NoCB	208	103	98	5.0
Decachlorobiphenyl	209	132	136	3.0

%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	Test America		
Spike 1 ID	LCS-26575	Spike 2 ID	LCSD-26576
Spike 1 Filename	P101009A_04	Spike 2 Filename	P101009A_05

Compound	IUPAC	Spike 1 %REC	Spike 2 %REC	%RPD
2-MoCB	1	111	114	2.7
4-MoCB	3	113	119	5.2
2,2'-DiCB	4	99	102	3.0
4,4'-DiCB	15	113	99	13.2
2,2',6-TrCB	19	101	101	0.0
3,4,4'-TrCB	37	107	109	1.9
2,2',6,6'-TeCB	54	98	101	3.0
3,3',4,4'-TeCB	77	101	102	1.0
3,4,4',5-TeCB	81	104	105	1.0
2,2',4,6,6'-PeCB	104	102	101	1.0
2,3,3',4,4'-PeCB	105	110	111	0.9
2,3,4,4',5-PeCB	114	103	108	4.7
2,3',4,4',5-PeCB	118	124	119	4.1
2,3',4,4',5'-PeCB	123	110	115	4.4
3,3',4,4',5-PeCB	126	104	107	2.8
2,2',4,4',6,6'-HxCB	155	100	101	1.0
(156/157)	156/157	109	111	1.8
2,3',4,4',5,5'-HxCB	167	110	111	0.9
3,3',4,4',5,5'-HxCB	169	103	109	5.7
2,2',3,4',5,6,6'-HpCB	188	100	99	1.0
2,3,3',4,4',5,5'-HpCB	189	108	107	0.9
2,2',3,3',5,5',6,6'-OcCB	202	98	103	5.0
2,3,3',4,4',5,5',6-OcCB	205	105	100	4.9
2,2',3,3',4,4',5,5',6-NoCB	206	102	98	4.0
2,2',3,3',4,5,5',6,6'-NoCB	208	98	104	5.9
Decachlorobiphenyl	209	121	128	5.6

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

REPORT OF LABORATORY ANALYSIS