Self-Implementing TSCA Cleanup
Substation V-94 Removal and Disposal
North Boeing Field
Seattle, Washington

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Prepared for

The Boeing Company

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1.0 INTRODUCTION

This report documents cleanup activities conducted in November 2014 for the removal and disposal of Substation V-94 at North Boeing Field (NBF) located in Seattle, Washington (Figure 1). Sampling results for the surface debris at the western edge of the concrete transformer pad at Substation V-94 indicated the presence of polychlorinated biphenyls (PCBs). Surface debris was sampled as part of the environmental sampling efforts supporting the demolition of the 3-818 building, located east of the substation. Boeing began demolition of the 3-818 building in March 2014; the Substation V-94 cleanup was conducted in November 2014. This report describes the methods that were employed for removal of PCB-containing concrete, asphalt, soil, and surface debris, as well as removal of two catch basins and an associated storm drain line, in the vicinity of Substation V-94.

PCBs were detected at a concentration greater than 50 milligrams per kilogram (mg/kg; up to 280 mg/kg) in a composite sample of the surface debris accumulated on the asphalt at the western edge of the concrete transformer pad at Substation V-94. Therefore, the removal and disposal of the concrete and surface debris associated with Substation V-94 was conducted in accordance with the Toxic Substances Control Act (TSCA) under the requirements of the self-implementing procedures for the cleanup and disposal of PCB remediation waste [40 C.F.R. § 761.61 (a)]. Removal and disposal of the concrete, asphalt, soil, and surface debris was conducted in accordance with the *Self-Implementing TSCA Work Plan, Substation V-94 Removal and Disposal, North Boeing Field, Seattle, Washington* (Work Plan, Landau Associates 2014), which was approved by the U.S. Environmental Protection Agency on April 18, 2014 (EPA 2014).

All material (concrete and surface debris) was assumed to have concentrations of PCBs greater than 50 mg/kg, thus, additional characterization sampling was not conducted prior to removal and disposal of Substation V-94, with the exception of asphalt samples from the perimeter of the substation and storm drain solid samples collected from adjacent catch basins, as described in Section 2.0. Confirmation sampling was performed in the soil footprint of Substation V-94 following removal and disposal of the concrete and surface debris associated with the substation. The Substation V-94 concrete pad area and the samples collected prior to cleanup activities are shown on Figure 2. The final excavation cleanup area and final confirmation soil sample locations are shown on Figure 3. All confirmation samples representing soil remaining in place were below the target remediation level of 1.0 mg/kg.

This report provides a description of the procedures used for removal and disposal of Substation V-94 (Section 2.0) and the procedures used for confirmation sampling and confirmation sample results (Section 3.0).

1.1 BACKGROUND

As described in Section 1.0, PCBs were detected at a concentration greater than 50 mg/kg in a composite sample of surface debris accumulated on the asphalt at the western edge of the concrete transformer pad at Substation V-94. While there have been no known spills or releases from the Substation V-94 transformer, it is assumed that the transformer is the source of PCBs in the Substation V-94 cleanup area, and that minor releases occurred prior to removal of the transformer. Based on the result of the composite surface debris sample collected adjacent to the Substation V-94 transformer pad, all substation pad and curb concrete, and associated surface debris, was disposed of as TSCA material under the self-implementing procedures described in this report.

Additional characterization samples were collected in February 2014 from the asphalt surrounding the perimeter of the substation. Two asphalt samples were collected from each side of the substation. All asphalt samples results were below 1.0 mg/kg with the exception of one sample on the north side of the substation where PCBs were detected at 1.2 mg/kg (sample location Asphalt-N02). This section of asphalt was mechanically broken-up and disposed of as TSCA material as required in 40 C.F.R. § 761.61 (a)(4)(i) for disposal of bulk PCB remediation waste with PCB concentrations greater than 1.0 mg/kg. This area of removed asphalt was included in the confirmation sample area described in Section 3.0 below.

Storm drain solids from two catch basins (CB278 and CB279) located adjacent to the concrete transformer pad of Substation V-94 were also sampled in February 2014. PCBs were not detected at CB278. Total PCBs were detected at a concentration below 1.0 mg/kg at CB279 (0.22 mg/kg as-received and 0.54 mg/kg dry weight). Based on total PCB results in confirmation soil samples collected during cleanup activities adjacent to CB278 and CB279 and development plans related to the 3-818 building demolition, CB278 and CB279 and the associated storm drain line connecting the two structures were removed during TSCA cleanup activities and disposed of as TSCA material in accordance with the waste handling procedures described in this report.

Locations of the PCBs characterization samples (surface debris, asphalt, and storm drain solids) described above are shown on Figure 2. PCBs characterization sample data is presented in detail in the Work Plan.

2.0 SUBSTATION REMOVAL AND DISPOSAL ACTIVITIES

Removal and disposal of the concrete transformer pad, surface debris, and subsurface soil associated with Substation V-94 was conducted in November 2014 in accordance with the Work Plan. The removal and disposal was conducted in a manner that minimized the release of PCBs to the environment and allowed for proper disposal of the material. The removal and disposal was performed by qualified construction contractors selected by Boeing. The contractor worked with Boeing prior to beginning removal and disposal activities to initiate procedures that were used to reduce the potential for deposition of PCB-contaminated construction debris on nearby paved surfaces that could potentially be discharged to the stormwater drainage system. The contractor placed plastic sheeting or other protective barriers over paved surfaces adjacent to the cleanup area to eliminate the need for decontamination of paved areas and decontamination of cleaning equipment (such as street sweepers and vacuums) following cleanup. Plastic sheeting and barriers were monitored for rips and tears and were replaced immediately if damage was observed. No evidence of oil stains or discolored soil was observed during excavation activities.

The transformer, associated electrical equipment, and underground electrical lines and conduit were removed prior to removal and disposal of the concrete transformer pad. The concrete pad thickness varied from approximately 18 to 24 inches. There was no observed visual staining or indication of contamination associated with electrical lines or conduit in the soil beneath the concrete transformer pad. The transformer and associated electrical equipment were cut into pieces to allow for removal and transportation, and will be stored in a staging area at Boeing's facility in Auburn, Washington. The transformer oil was tested prior to removal, and did not contain detectable levels of PCBs above the laboratory reporting limit of 1.0 mg/kg per Aroclor. Since PCBs were not detected in the transformer oil, it was disposed of by Boeing in the on-site recycle oil tank.

2.1 RUNOFF CONTROL

Control measures were implemented to capture wastewater, slurry, and debris generated during removal of concrete and surface debris, and to prevent potentially contaminated construction debris from entering the stormwater drainage system. The control measures that were implemented include the following:

- **Weather Restrictions.** Removal of PCB-containing material was not conducted during periods of significant rain.
- **Catch Basin Seals or Other Control Devices.** Prior to removal of the substation, the two catch basins in the vicinity of Substation V-94 (CB278 and CB279) were blocked off with catch basin seals to eliminate the potential for debris to enter the storm drain system.

- **Catch Basin Seals or Other Control Devices.** Prior to removal of the substation, the two catch basins in the vicinity of Substation V-94 (CB278 and CB279) were blocked off with catch basin seals to eliminate the potential for debris to enter the storm drain system.

- **Plastic Sheeting and Sand Bags.** At the end of each work day, the excavation area was covered with plastic sheeting held in place by sand bags to prevent stormwater runoff from entering the open excavation area.

The use of air-powered vacuums was not required as the concrete was broken into pieces using a concrete breaker and excavator bucket, and saw cutting work was not performed.

2.2 MANAGEMENT OF WASTE

All solid waste containing PCBs equal to or greater than 50 mg/kg, and PCBs remediation waste containing PCBs greater than 1.0 mg/kg, was shipped in Washington State Department of Transportation-compliant containers and disposed of at Chemical Waste Management, a Subtitle C landfill in Arlington, Oregon (a chemical waste landfill permitted under 40 C.F.R. § 761.75 to accept TSCA waste). Approximately 106 tons of solid waste was shipped from NBF to the Chemical Waste Management Subtitle C landfill in Arlington, Oregon, which is consistent with field observations and waste manifests maintained by Boeing for this cleanup. Waste manifests are provided in Appendix A. Solid waste that was removed from the Substation V-94 area consisted of concrete, asphalt, surface debris, soil, two concrete catch basin structures, and the associated storm drain line.

2.3 DECONTAMINATION

Non-disposable and nonporous equipment such as concrete breakers, excavators, and other construction tools that came into contact with PCB-contaminated concrete, soil, and surface debris were decontaminated by the construction contractor after cleanup activities were completed. Decontamination after removal of the substation concrete, soil, and surface debris containing PCBs greater than or equal to 50 mg/kg was performed using hand-wiping with an appropriate solvent in accordance with the decontamination procedures required under 40 C.F.R. § 761.79. Only parts of the equipment that were reasonably likely to have been in contact with PCB-containing materials were decontaminated.

3.0 CONFIRMATION SAMPLE COLLECTION PROCEDURES

Confirmation soil samples conformed to 40 C.F.R. § 761.61(a)(6) and were collected from the footprint of the area where Substation V-94 was removed. The footprint of the cleanup was expanded from the original footprint of Substation V-94 where side-wall confirmation sample results exceeded the target remediation level of 1.0 mg/kg; the original footprint of Substation V-94 and the final excavation area are shown on Figure 3. Self-implementing cleanup was considered to be complete when verification sampling yielded total PCBs results less than or equal to the target remediation level of 1.0 mg/kg, which is the TSCA cleanup level for bulk PCBs remediation waste in high occupancy areas and the interim action level previously determined by Ecology for NBF soil in areas where PCBs are not present in groundwater [based on the lowest direct contact Applicable or Relevant and Appropriate Requirements (ARARs)]. When confirmation sampling yielded concentrations greater than this target remediation level, additional excavation and removal of soil was initiated per 40 C.F.R. § 761.61(a)(6)(ii)(B). Excavation activities, as demonstrated by confirmation sample results, were successful in achieving the target remediation level of 1.0 mg/kg for total PCBs throughout the excavation area. Additional contingency measures for high occupancy areas with PCBs remediation waste remaining at concentrations greater than 1.0 mg/kg and less than 10 mg/kg under the requirements of 40 C.F.R. §761.61(a) were not required to be implemented.

Confirmation soil samples were collected according to a 1.5-meter grid overlay system, oriented to magnetic north, as defined in 40 C.F.R. § 761.280(b)(2). A sample was collected from each grid intersection in the area of soil excavation. Additional soil samples were collected from the sidewalls of the excavation footprint. The original excavation grid overlay was extended into the southeast corner of the excavation to facilitate grid sampling in the larger extended excavation area. When the excavation proceeded in the horizontal or vertical direction, new sidewall and grid samples were collected. Confirmation soil samples were collected using a clean, stainless-steel spoon. Soil samples were placed into an 8-ounce glass sample jar, labeled, and stored on ice.

When confirmation samples yielded total PCBs concentrations greater than the target remediation level of 1.0 mg/kg, additional soil excavation was initiated vertically and horizontally to the extent practicable, and the confirmation sampling procedures were repeated. The final excavation depths range from 0.0 to 3.0 ft below the bottom of the concrete pad. Confirmation sample results are provided in Table 1. Confirmation soil sample locations and depths of soil remaining in place are shown on Figure 3. As shown on Figure 3, all confirmation samples representing soil remaining in place are below the target remediation level of 1.0 mg/kg for total PCBs.

3.1 SAMPLE DOCUMENTATION, HANDLING, AND ANALYSIS

A complete record of all field activities was maintained. All recordkeeping conformed to 40 C.F.R. § 761.61(a)(9) and 40 C.F.R § 761.125(c)(5). Documentation included field logbooks, field sampling forms, photographs, sample labels, chain-of-custody (COC) forms, and data management file copies. Field logbooks were used to record all field activities. Confirmation sample locations were photo-documented with a digital camera, with identification of the sample location in the photograph. Sample possession and handling was documented so that the sample was traceable from the time of sample collection, to the laboratory, and through data analysis. Records will be maintained for at least 5 years as required by 40 C.F.R. 761.125(c)(5).

3.2 CHEMICAL ANALYSES

Confirmation samples were transported to Boeing's contracted analytical laboratory, Analytical Resources Inc. (ARI), in Tukwila, Washington, within 24 hours of sample collection. All samples were analyzed for PCB aroclors by U.S. Environmental Protection Agency (EPA) Method 8082 in accordance with 40 C.F.R. § 761.272. Samples were submitted to the analytical laboratory on a 24-hour requested turnaround time. Laboratory data packages are provided in Appendix B.

3.3 SAMPLE LABELING, SHIPPING, AND CHAIN-OF-CUSTODY

Each soil sample was assigned a unique alphanumeric identifier that included the sampling event identifier 3-818-V94, the sample location identification, the depth of the sample from below the bottom of the concrete pad, and the date in month-day-year format. For example, the first soil sample collected from location S01, at 0.0 ft below the concrete pad (i.e., the soil immediately below the removed concrete pad), on November 6, 2014, was identified as 3-818-V94-S01-0.0-110614.

Sample container labels were completed immediately before sample collection. Container labels and COC forms included the project name (Boeing NBF); the Boeing project manager's name (Carl Bach); the project number (025082.214.005); the sample ID; the initials of the person who collected the sample; the date and time of collection; and the analysis required. Samples were placed on ice in a sealed cooler immediately after collection and delivered to the contracted analytical laboratory by Landau Associates within 24 hours of sample collection. All samples submitted for analysis were accompanied by a COC form.

4.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of The Boeing Company and applicable regulatory agencies for specific application to the NBF locality. No other party is entitled to rely on the information and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

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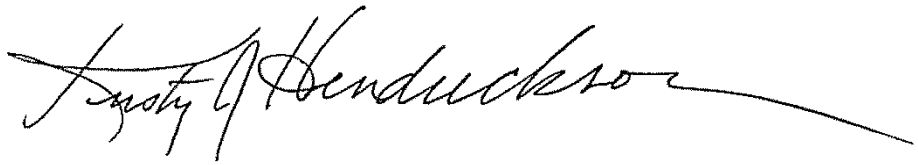

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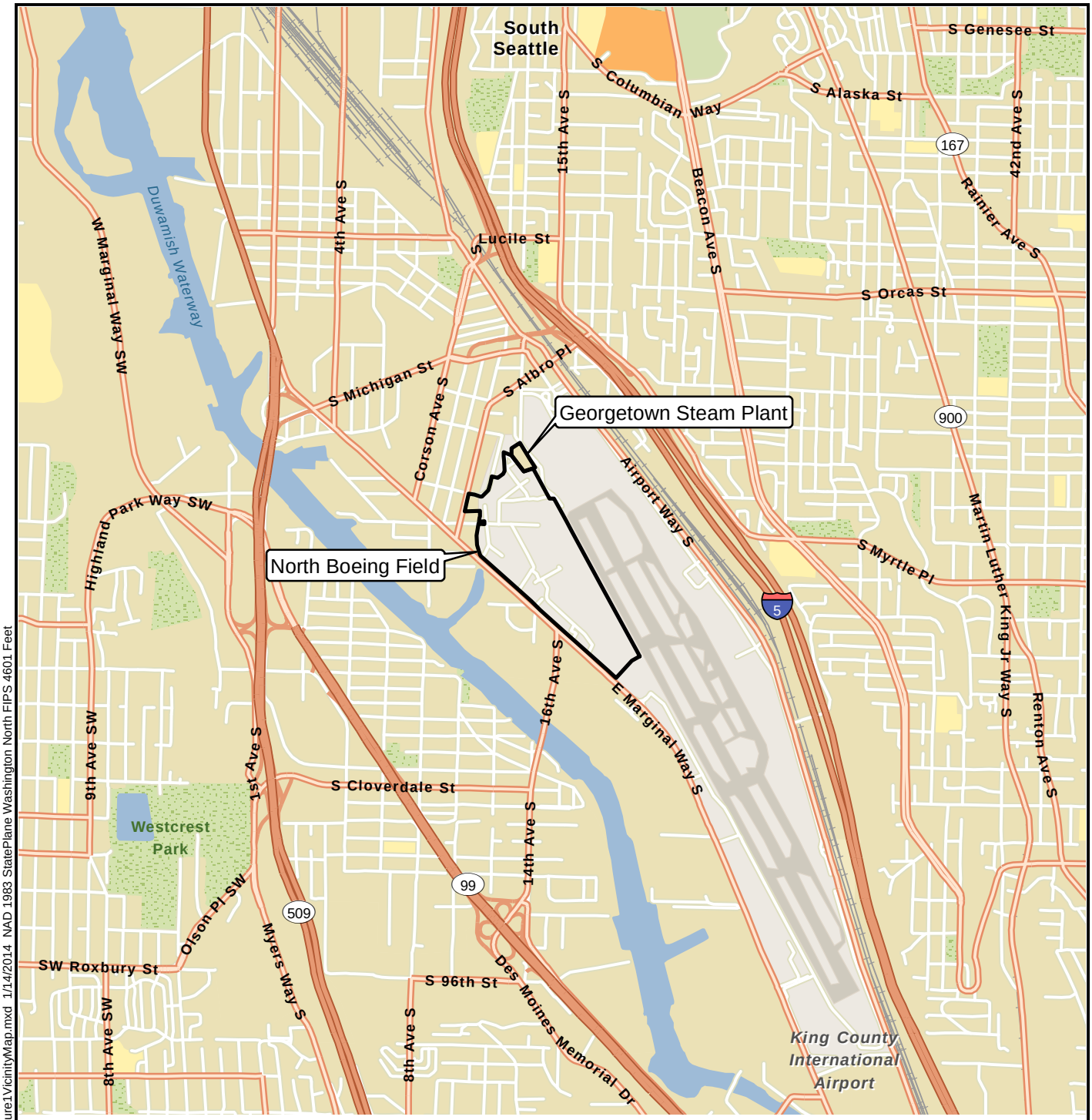
Principal

RWT/CMG/KJH/tam

5.0 REFERENCES

EPA. 2014. Letter: *Notification of Self-Implementing polychlorinated biphenyl (PCB) Cleanup for a North Boeing Field Substation Removal.* From Kelly McFadden, U.S. Environmental Protection Agency, Region 10, to Carl Bach, The Boeing Company. April 18.

Landau Associates. 2014. *Self-Implementing TSCA Work Plan, Substation V-94 Removal and Disposal, North Boeing Field, Seattle, Washington.* Prepared for The Boeing Company. April 16.



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0 0.5 1

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Data Source: Esri 2012

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North Boeing Field Seattle, Washington	**Vicinity Map**	Figure 1

G:\Projects\025\082514\011\Substation V-94 TSCA Work Plan\Figure2SubstationV-94SampleLocations.mxd 12/9/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Asphalt Sample Location
- Composite Surface Debris/ Soil Sample Location
- Substation V-94 Area
- South Lateral Drain Line
- 15 1-ft Contours
- Catch Basin
- Inlet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 25 50

Scale in Feet

Data Sources: Puget Sound Lidar Consortium: Esri World Imagery.

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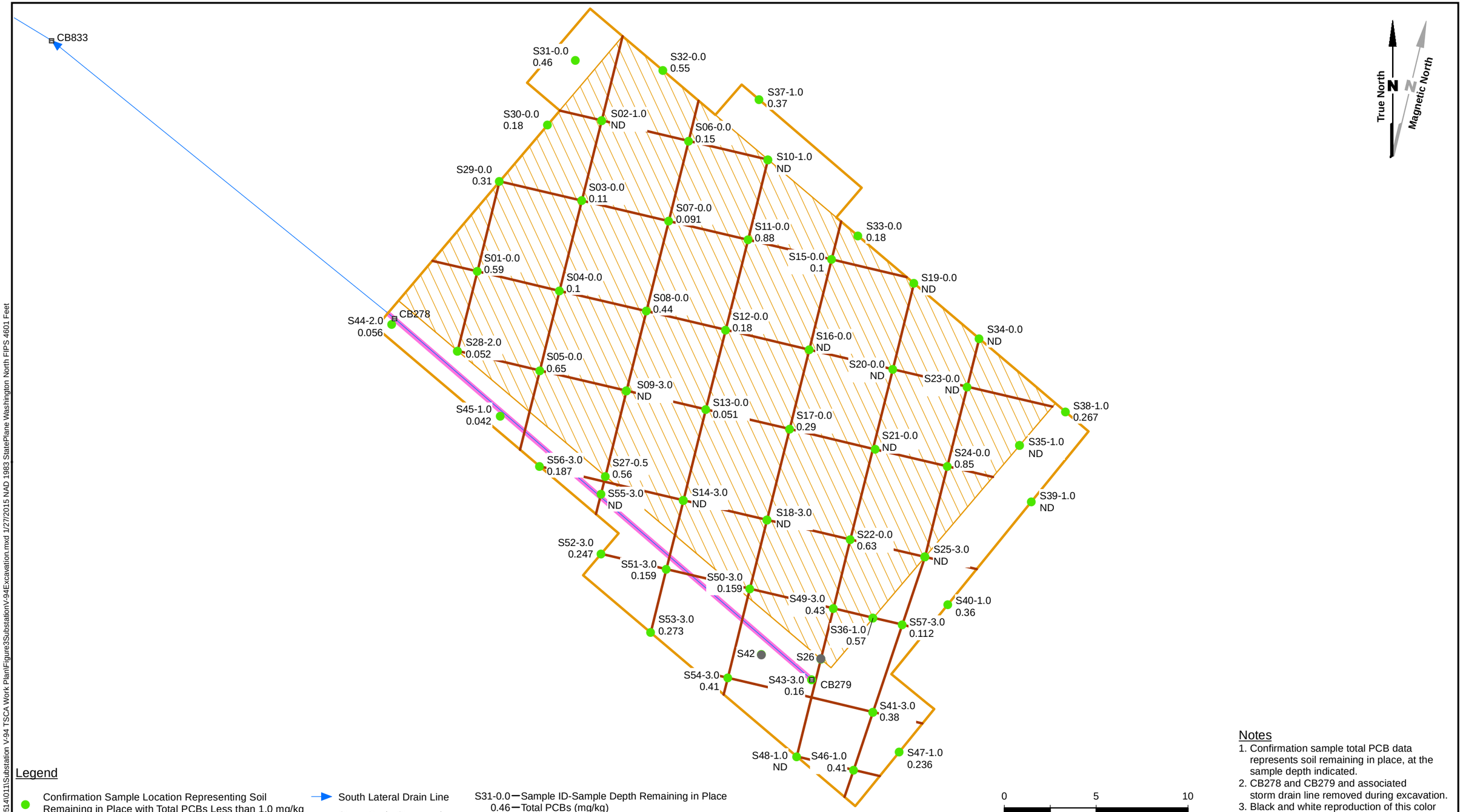
North Boeing Field
Substation V-94 TSCA Cleanup
Seattle, Washington

Substation V-94 and PCB Characterization Sample Locations

Figure 2



Legend

- Confirmation Sample Location Representing Soil Remaining in Place with Total PCBs Less than 1.0 mg/kg
- Confirmation Sample Location Representing Soil Removed During Subsequent Excavation Activities
- Catch Basin
- South Lateral Drain Line
- Storm Drain Structure/ Storm Drain Line Removed During Excavation Activities
- Grid Lines
- Excavation Area
- Original Extent of Substation V-94 Concrete Pad

S31-0.0 — Sample ID-Sample Depth Remaining in Place
0.46 — Total PCBs (mg/kg)

S26 — Sample ID/Confirmation Sample Removed During Subsequent Excavation Activities

Notes

1. Confirmation sample total PCB data represents soil remaining in place, at the sample depth indicated.
2. CB278 and CB279 and associated storm drain line removed during excavation.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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North Boeing Field Substation V-94 TSCA Cleanup Seattle, Washington	**Substation V-94 Excavation Confirmation Sample Locations and Results**	Figure 3

G:\Projects\025\082\53\40111\Substation V-94 TSCA Work Plan\Figure3SubstationV-94Excavation.mxd 1/27/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

TABLE 1
SOIL ANALYTICAL DATA
SUBSTATION V-94 TSCA CLEANUP– CONFIRMATION SAMPLING

	3-818-V94-S01-0.0 ZJ41A 11/6/2014	3-818-V94-S02-0.0 ZJ41B 11/6/2014 (a)	3-818-V94-S02-1.0 ZK42A 11/14/2014	3-818-V94-S03-0.0 ZJ41C 11/6/2014	3-818-V94-S04-0.0 ZJ41D 11/6/2014	3-818-V94-S05-0.0 ZJ41E 11/6/2014	3-818-V94-S06-0.0 ZJ41F 11/6/2014	3-818-V94-S07-0.0 ZJ41G 11/6/2014	3-818-V94-S08-0.0 ZJ41H 11/6/2014	3-818-V94-9-0.0 ZJ41I 11/6/2014 (a)	3-818-V94-9-1.5 ZK42Q 11/14/2014 (a)	3-818-V94-S09-3.0 ZL09O 11/19/2014	3-818-V94-S10-0.0 ZJ41J 11/6/2014 (a)	3-818-V94-S10-1.0 ZK42C 11/14/2014	3-818-V94-S11-0.0 ZJ41K 11/6/2014	3-818-V94-S12-0.0 ZJ41L 11/6/2014	3-818-V94-S13-0.0 ZJ41M 11/6/2014	3-818-V94-S14-0.5 ZJ41N 11/6/2014 (a)	3-818-V94-S14-1.5 ZK42P 11/14/2014 (a)
PCBs (mg/kg)																			
Aroclor 1016	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1242	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1248	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1254	0.12 U	0.22 U	0.03 U	0.032 U	0.032 U	0.19 U	0.031 U	0.033 U	0.063 U	0.48 U	**0.37**	0.028 U	0.26 U	0.029 U	0.26 U	0.063 U	0.031 U	0.26 U	0.64 U
Aroclor 1260	**0.59**	**1.3**	0.03 U	**0.11**	**0.1**	**0.65**	**0.15**	**0.091**	**0.44**	**1.4**	**0.6**	0.028 U	**1.6**	0.029 U	**0.88**	**0.18**	**0.051**	**1.1**	**2.1**
Aroclor 1221	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1232	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1262	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Aroclor 1268	0.031 U	0.032 U	0.03 U	0.032 U	0.032 U	0.032 U	0.031 U	0.033 U	0.032 U	0.032 U	0.031 U	0.028 U	0.032 U	0.029 U	0.032 U	0.031 U	0.031 U	0.032 U	0.16 U
Total PCBs	**0.59**	**1.3**	ND	**0.11**	**0.1**	**0.65**	**0.15**	**0.091**	**0.44**	**1.4**	**0.97**	ND	**1.6**	ND	**0.88**	**0.18**	**0.051**	**1.1**	**2.1**

TABLE 1
SOIL ANALYTICAL DATA
SUBSTATION V-94 TSCA CLEANUP– CONFIRMATION SAMPLING

	3-818-V94-S14-3.0 ZL09N 11/19/2014	3-818-V94-S15-0.0 ZJ41O 11/6/2014	3-818-V94-S16-0.0 ZJ41P 11/6/2014	3-818-V94-S17-0.0 ZJ41Q 11/6/2014	3-818-V94-S18-0.0 ZJ41R 11/6/2014 (a)	3-818-V94-S18-1.5 ZK42O 11/14/2014 (a)	3-818-V94-S18-3.0 ZL09I 11/19/2014	3-818-V94-S19-0.0 ZJ42A 11/6/2014	3-818-V94-S20-0.0 ZJ42B 11/6/2014	3-818-V94-S21-0.0 ZJ42C 11/6/2014	3-818-V94-S22-0.0 ZJ42D 11/6/2014	3-818-V94-S23-0.0 ZJ42E 11/6/2014	3-818-V94-S24-0.0 ZJ42F 11/6/2014	3-818-V94-S25-0.0 ZJ42G 11/6/2014 (a)	3-818-V94-S25-1.0 ZK42G 11/14/2014 (a)	3-818-V94-S25-3.0 ZL09A 11/19/2014	3-818-V94-S26-0.5 ZJ42H 11/6/2014 (a)	3-818-V94-S26-1.0 ZK42K 11/14/2014 (a)	3-818-V94-S27-0.5 ZJ42I 11/6/2014
PCBs (mg/kg)																			
Aroclor 1016	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1242	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1248	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.064 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1254	0.028 U	0.032 U	0.032 U	0.097 U	1.3 U	**1.5**	0.029 U	0.032 U	0.032 U	0.033 U	**0.21**	0.032 U	**0.43**	**1.6**	1.2 U	0.031 U	**0.38**	**1.2**	0.13 U
Aroclor 1260	0.028 U	**0.1**	0.032 U	**0.29**	**3**	**2.1**	0.029 U	0.032 U	0.032 U	0.033 U	**0.42**	0.032 U	**0.42**	**3**	**2.6**	0.031 U	**0.77**	**5.6**	**0.56**
Aroclor 1221	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1232	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1262	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Aroclor 1268	0.028 U	0.032 U	0.032 U	0.032 U	0.033 U	0.15 U	0.029 U	0.032 U	0.032 U	0.033 U	0.031 U	0.032 U	0.031 U	0.032 U	0.03 U	0.031 U	0.033 U	0.15 U	0.032 U
Total PCBs	ND	**0.1**	ND	**0.29**	**3**	**3.6**	ND	ND	ND	ND	**0.63**	ND	**0.85**	**4.6**	**2.6**	ND	**1.15**	**6.8**	**0.56**

TABLE 1
SOIL ANALYTICAL DATA
SUBSTATION V-94 TSCA CLEANUP– CONFIRMATION SAMPLING

	3-818-V94-S28-0.5 ZJ42J 11/6/2014 (a)	3-818-V94-S28-2.0 ZK42S 11/14/2014	3-818-V94-S29-0.0 ZJ42K 11/6/2014	3-818-V94-S30-0.0 ZJ42L 11/6/2014	3-818-V94-S31-0.0 ZJ42M 11/6/2014	3-818-V94-S32-0.0 ZJ42N 11/6/2014	3-818-V94-S33-0.0 ZJ42O 11/6/2014	3-818-V94-S34-0.0 ZJ42P 11/6/2014	3-818-V94-S35-0.0 ZJ42Q 11/6/2014 (a)	3-818-V94-S35-1.0 ZK42E 11/14/2014	3-818-V94-S36-0.0 ZJ42R 11/6/2014 (a)	3-818-V94-S36-1.0 ZK42I 11/14/2014	3-818-V94-S37-1.0 ZK42B 11/14/2014	3-818-V94-S38-1.0 ZK42D 11/14/2014	3-818-V94-S39-1.0 ZK42F 11/14/2014	3-818-V94-S40-1.0 ZK42H 11/14/2014	3-818-V94-S41-1.0 ZK42J 11/14/2014 (a)	3-818-V94-S41-3.0 ZL09C 11/19/2014	3-818-V94-S42-0.0 ZK42N 11/14/2014 (a)
PCBs (mg/kg)																			
Aroclor 1016	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Aroclor 1242	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Aroclor 1248	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.26 U	0.029 U	0.064 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.65 U
Aroclor 1254	0.48 U	0.031 U	0.079 U	0.04 U	0.096 U	0.095 U	0.048 U	0.032 U	**4.6**	0.029 U	2 U	**0.15**	0.088 U	**0.22**	0.033 U	**0.12**	**0.93**	**0.13**	**11**
Aroclor 1260	**1.3**	**0.052**	**0.31**	**0.18**	**0.46**	**0.55**	**0.18**	0.032 U	**1.6**	0.029 U	**8.1**	**0.42**	**0.37**	**0.047**	0.033 U	**0.24**	**1.7**	**0.25**	**9.3**
Aroclor 1221	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Aroclor 1232	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Aroclor 1262	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Aroclor 1268	0.032 U	0.031 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.033 U	0.029 U	0.032 U	0.03 U	0.029 U	0.03 U	0.033 U	0.03 U	0.15 U	0.033 U	0.16 U
Total PCBs	**1.3**	**0.052**	**0.31**	**0.18**	**0.46**	**0.55**	**0.18**	ND	**6.2**	ND	**8.1**	**0.57**	**0.37**	**0.267**	ND	**0.36**	**2.63**	**0.38**	**20.3**

TABLE 1
SOIL ANALYTICAL DATA
SUBSTATION V-94 TSCA CLEANUP– CONFIRMATION SAMPLING

	3-818-V94-S43-1.0 ZK42L 11/14/2014 (a)	3-818-V94-S43-3.0 ZL09G 11/19/2014	3-818-V94-S44-2.0 ZK42M 11/14/2014	3-818-V94-S45-1.0 ZK42R 11/14/2014	3-818-V94-S46-1.0 ZL09E 11/19/2014	3-818-V94-S47-1.0 ZL09D 11/19/2014	3-818-V94-S48-1.0 ZL09F 11/19/2014	3-818-V94-S49-3.0 ZL09H 11/19/2014	3-818-V94-S50-3.0 ZL09J 11/19/2014	3-818-V94-S51-3.0 ZL09M 11/19/2014	3-818-V94-S52-3.0 ZL09Q 11/19/2014	3-818-V94-S53-3.0 ZL09L 11/19/2014	3-818-V94-S54-3.0 ZL09K 11/19/2014	3-818-V94-S55-3.0 ZL09P 11/19/2014	3-818-V94-S56-3.0 ZL09R 11/19/2014	3-818-V94-S57-3.0 ZL09B 11/19/2014
PCBs (mg/kg)																
Aroclor 1016	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1242	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1248	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1254	**2.2**	**0.084**	0.03 U	0.03 U	**0.17**	0.048 U	0.03 U	0.18 U	**0.074**	**0.057**	**0.077**	**0.18**	**0.41**	0.029 U	**0.11**	**0.04**
Aroclor 1260	**3.1**	**0.076**	**0.056**	**0.042**	**0.24**	**0.2**	0.03 U	**0.43** U	**0.085**	**0.028**	**0.17**	**0.093**	0.06 U	0.029 U	**0.077**	**0.072**
Aroclor 1221	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1232	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1262	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	0.032 U	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Aroclor 1268	0.15 U	0.034 U	0.03 U	0.03 U	0.028 U	**0.036**	0.03 U	0.029 U	0.029 U	0.028 U	0.027 U	0.03 U	0.03 U	0.029 U	0.028 U	0.029 U
Total PCBs	**5.3**	**0.16**	**0.056**	**0.042**	**0.41**	**0.236**	ND	**0.43**	**0.159**	**0.085**	**0.247**	**0.273**	**0.41**	ND	**0.187**	**0.112**

U = Indicates the compound was not detected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of cleanup level.

(a) Represents soil removed during excavation activities. Does not represent soil remaining in place.

Notes: TSCA screening level is 1 mg/kg.

APPENDIX A

Waste Manifests

437163

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAD980982037
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 006161076 FLE

5. Generator's Name and Mailing Address:
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-26)
SEATTLE, WA 98124
Generator's Phone: 2065442000

Generator's Site Address (if different than mailing address):
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	30000	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
BTN=Y3592 2 RXN00086-00, ERG 171., CHEMTREC# CCN22116 NBF
OSD-11-05-2014
CHIU 252004
25060 P
11367K

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month/Day/Year: 11/05/14

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: ______
Transporter signature (for exports only): ______ Date leaving U.S.: ______

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Bonnie C. Han — Signature — Month/Day/Year: 11/05/14
Transporter 2 Printed/Typed Name: Smith — Signature — Month/Day/Year: 11/16/14

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifest weight per Mary Jo Connelly/Boeing 11-17-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tina Weiser — Signature: Tina Weiser — Month/Day/Year: 11/14/14

437163

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number	22. Page	23. Manifest Tracking Number
WAD980788037	2/2	006161076 FLE

24. Generator's Name: The Boeing Co.

25. Transporter 3 Company Name: CRLRC — U.S. EPA ID Number: ORD 987173457

26. Transporter ____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: Bonnie Shaw — Signature: B Shaw — Month: 1 Day: 12 Year: 14

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

4371164

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD[illegible]2057	1 2	800-424-9300	006161077 FLE

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2065442000

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	30000	K	KT02
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
ERG#Y3503 2. RXN00006-00, ERG 171., CHEMTREC# CCN22116 NSF
05D-11-05-2014
CHW752170
29240 P
13263K

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month/Day/Year: 11/05/14

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Bonnie C. Hain — Signature: [signature] — Month/Day/Year: 11/05/14
Transporter 2 Printed/Typed Name: [illegible] — Signature: [signature] — Month/Day/Year: 11/10/14

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary Jo Donnelly/Boeing 5m 11-17-14
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 504-0027
1. H132 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tina Weiser — Signature: Tina Weiser — Month/Day/Year: 11/14/14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

4371641

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: WAD 980983037

22. Page: 3/2

23. Manifest Tracking Number: 006161077 FLE

24. Generator's Name: The Boeing Co.

25. Transporter 3 Company Name: ERLRC — U.S. EPA ID Number: ORD 987173457

26. Transporter ____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: Bonnie Shaw — Signature: B Shaw — Month: 11 Day: 12 Year: 14

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

437256

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAD980982037
2. Page 1 of 2
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 007794661 FLE

5. Generator's Name and Mailing Address:
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2065442000

Generator's Site Address (if different than mailing address):
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address:
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

GENERATOR

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	~~23000~~ ~~23000~~ SW 11-20-14	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
BTN=Y3651 1. RXN00056-00., CHEMTREC# CCN22118 NBF

~~RQ~~ ~~6~~ 050 11-6-14

CHU 250230 27840 P 12628 K

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month 11 Day 10 Year 14

INT'L

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: ______
Transporter signature (for exports only): ______ Date leaving U.S.: ______

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ronnie C. Hay — Signature: [signature] — Month 11 Day 10 Year 14
Transporter 2 Printed/Typed Name: Seth Barrientes — Signature: [signature] — Month 11 Day 18 Year 14

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space: ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary Jo Donnelly/Boeing -tm 11-20-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tina Weiser — Signature: Tina Weiser — Month 11 Day 20 Year 14

437256

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: WAD980982037

22. Page: 2 of 2

23. Manifest Tracking Number: 007794661 FLE

24. Generator's Name: The Boeing Co

25. Transporter 3 Company Name: CRRC — U.S. EPA ID Number: ORD987173457

26. Transporter ____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
				25400				
								P
								K

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials — Printed/Typed Name: Sherrie Wilkins — Signature: [signature] — Month: 11 Day: 19 Year: 14

34. Transporter ____ Acknowledgment of Receipt of Materials — Printed/Typed Name: — Signature: — Month: Day: Year:

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

11 21 14

DESIGNATED FACILITY TO GENERATOR

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

437397

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD880982037	1	800-424-9300	007794664 FLE

GENERATOR

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2065442000

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD038322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792810

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	22000	K	1082
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
STN=Y3719 1. RQN000086-00., CHEMTREC# CCN221198F

OSD 11-14-2014 CLHA258180 30880P / 14007K

RED BOX

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month/Day/Year: 11/18/14

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Michael P. Bateman — Signature: [signature] — Month/Day/Year: 11/18/14

Transporter 2 Printed/Typed Name: [illegible] — Signature: [signature] — Month/Day/Year: 11/24/14

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary To Donna 14/Boeing sm 12-2-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month/Day/Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Tina Waser — Signature: Tina Waser — Month/Day/Year: 12/2/14

K

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

437396

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980862037	1	800-424-9300	007794665 FLE

GENERATOR

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2066442001

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name
CLEAN HARBORS ENV. SERVICES INC
U.S. EPA ID Number
MAD039322250

7. Transporter 2 Company Name
UNION PACIFIC RAILROAD
U.S. EPA ID Number
NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	22000	K	D022
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
STN=Y3720 1. RXN00086-00., CHEMTREC# CCN22118 NBF

OSD 11-14-2014 CLHA258117 29240P

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
ANDY Howe	Andy Howe	11	18	14

TRANSPORTER INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Michael P. Bateman	Michael P Bateman	11	18	14
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year
Smith	Smith	11	24	14

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mark DeDonnelly/Boeing 6m 12-2-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year
Sue McAhren	Sue McAhren	12	02	14

GRAY BOX

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

437560

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980682037	1	800-424-9300	007794666 FLE

GENERATOR

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2065442000

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	22000	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
BTN=Y3785 1. RXN00066-00., CHEMTREC# CCN22118 NBF

11231K
24760P

OSD 11-19-2014 CHIU 258283

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month 11 Day 24 Year 14

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: ARBEN FERKO — Signature: — Month 12 Day 02 Year 14
Transporter 2 Printed/Typed Name: Cindi Cregg (UP) — Signature: Cindi Cregg — Month 12 Day 3 Year 14

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary Jo Donnelly/Boeing 1m 12-10-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tina Weiser — Signature: Tina Weiser — Month 12 Day 9 Year 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

437560

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	WAD980982037	2 of 2	007794666 FLE

24. Generator's Name: The Boeing Co

25. Transporter 3 Company Name: CRLRC — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes
						11.2K

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: Bonnie Shaw — Signature: B Shaw — Month 12 Day 15 Year 14

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

437558

Please print or type. (Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAD988982037
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 007794667 FLE

GENERATOR

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 9U4-20)
SEATTLE, WA 98124
Generator's Phone: 2065442001

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD
U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYL6)	1	CM	22000	K	D102
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
10106 K
BTN=Y3786 1. RXN00066-00., CHEMTREC# CCN22116 NBF
OSD 11-19-2014 CHU 252052

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE
Signature: Andy Howe
Month: 11 Day: 24 Year: 14

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: ARBEN PERKO
Signature:
Month: 12 Day: 02 Year: 14
Transporter 2 Printed/Typed Name: Sathya
Signature:
Month: 12 Day: 4 Year: 14

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary Jo Donnelly/Boeing 12-4-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Tina Weiser
Signature: Tina Weiser
Month: 12 Day: 11 Year: 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

437557

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	WAD980682037	1 2	800-424-9300	007794669 FLE

GENERATOR

5. Generator's Name and Mailing Address
THE BOEING CO.
P.O. BOX 3707 (MC 5U4-20)
SEATTLE, WA 98124
Generator's Phone: 2066442000

Generator's Site Address (if different than mailing address)
7500 E. MARGINAL WAY S.
SEATTLE, WA 98108

6. Transporter 1 Company Name: CLEAN HARBORS ENV. SERVICES INC — U.S. EPA ID Number: MAD039322259

7. Transporter 2 Company Name: UNION PACIFIC RAILROAD — U.S. EPA ID Number: NED001792910

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812
Facility's Phone: 541-454-2543
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, RQ (POLYCHLORINATED BIPHENYLS)	1	CM	22000	K	K002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
BTN=Y3847 1. RXN00066-00., CHEMTREC# CCN22118 NBF

10242K

BTN=Y3847 OSD 11-19-2014 CHIV 252004 22580P

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ANDY HOWE — Signature: Andy Howe — Month 12 Day 02 Year 14

TRANSPORTER, INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: ARBEN FERKO — Signature: — Month 12 Day 02 Year 14

Transporter 2 Printed/Typed Name: [illegible] — Signature: — Month 12 Day 4 Year 14

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
No change in manifested weight per Mary Jo Donnelly/Boeing 5m 12-10-14
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone: NFD B.x NO.

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Tina Weiser — Signature: Tina Weiser — Month 12 Day 10 Year 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

437557

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number WAD980982037	22. Page 2 of 2	23. Manifest Tracking Number 007194669 FLE

24. Generator's Name: The Boeing Co

25. Transporter 3 Company Name: CRRC — U.S. EPA ID Number: ORD987173457

26. Transporter ____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: Bonnie Shaw — Signature: B Shaw — Month: 12 Day: 5 Year: 14

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month — Day — Year

TRANSPORTER

35. Discrepancy

DESIGNATED FACILITY

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

APPENDIX B

Laboratory Data Reports

Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 10, 2014

Anne Halvorsen
Landau Associates, Inc.,
130 – 2nd Avenue
Edmonds, WA 98020

RE: Project: NBF 3-822 Main Fuel Farm
ARI Job: ZJ41

Dear Anne:

Please find enclosed original Chain of Custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eighteen samples in good condition on November 6, 2014.

The samples were analyzed for PCBs, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211

Enclosure

cc: Carl Bach, The Boeing Company, P.O. Box 3707, M/S 1W-12, Seattle, WA 98124-2207

1 of 37

LANDAU ASSOCIATES

☒ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (503) 542-1080
☐ _____

ZJ41

Date 11/6/14
Page 1 of 2

Chain-of-Custody Record

Project Name 3-818 V94 Substation Removal Project No. 0025082.214.005
Project Location/Event NBF/V94 Substation
Sampler's Name Al Starr, Rosemary Trimmer
Project Contact Colette Gaona
Send Results To Carl Bach, Colette Gaona, Anne Halvorsen

Turnaround Time RWT
☒ Standard
☒ Accelerated
☐ 24-hr TAT

Sample I.D.	Date	Time	Matrix	No. of Containers	PCBs
3-818-V94-SØ1-0.0-110614	11/6/14	1055	Soil	1	X
3-818-V94-SØ2-0.0-110614		1105		1	X
3-818-V94-SØ3-0.0-110614		1110		1	X
3-818-V94-SØ4-0.0-110614		1115		1	X
3-818-V94-SØ5-0.0-110614		1120		1	X
3-818-V94-SØ6-0.0-110614		1125		1	X
3-818-V94-SØ7-0.0-110614		1130		1	X
3-818-V94-SØ8-0.0-110614		1135		1	X
3-818-V94-SØ9-0.0-110614		1140		1	X
3-818-V94-S10-0.0-110614		1145		1	X
3-818-V94-S11-0.0-110614		1150		1	X
3-818-V94-S12-0.0-110614		1155		1	X
3-818-V94-S13-0.0-110614		1200		1	X
3-818-V94-S14-0.5-110614		1205		1	X
3-818-V94-S15-0.0-110614		1210		1	X
3-818-V94-S16-0.0-110614		1215		1	X
3-818-V94-S17-0.0-110614		1220		1	X
3-818-V94-S18-0.0-110614		1225		1	X

Testing Parameters

Observations/Comments

~~X Allow water samples to settle, collect aliquot from clear portion~~ RWT
~~X NWTPH-Dx - run acid wash/silica gel cleanup~~
___ run samples standardized to _____ product
___ Analyze for EPH if no specific product identified
VOC/BTEX/VPH (soil):
___ non-preserved
___ preserved w/methanol
___ preserved w/sodium bisulfate
___ Freeze upon receipt
___ Dissolved metal water samples field filtered
Other _____

Special Shipment/Handling or Storage Requirements on ice

Method of Shipment deliver to lab

Relinquished by	Received by	Relinquished by	Received by
Signature Rosemary Trimmer	Signature	Signature	Signature
Printed Name Rosemary Trimmer	Printed Name A. Volgardsen	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 11/6/14 Time 1513	Date 11/6/14 Time 1513	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 8/09

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Boeing
Project Name: 3-818 V94 Substation
COC No(s): _____ (NA)
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No: ZJH1
Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time: 1513 — 3.7 5.3

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 9CE7795

Cooler Accepted by: A Date: 11/6/14 Time: 1513

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI : (NA) YES Date/Time._____ Equipment:_____ Split by:_____

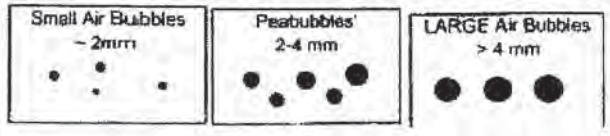
Samples Logged by: A Date: 11/6/14 Time: 1515

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date.



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

ZJH1 : 00003

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZJ41
Client: The Boeing Company
Project Event: 0025082.214.005
Project Name: 3-818 V94 Substation Removal

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	3-818-V94-S01-0.0-110614ZJ41A	14-24302		Soil	11/06/14 10:55	11/06/14 15:13
2.	3-818-V94-S02-0.0-110614ZJ41B	14-24303		Soil	11/06/14 11:05	11/06/14 15:13
3.	3-818-V94-S03-0.0-110614ZJ41C	14-24304		Soil	11/06/14 11:10	11/06/14 15:13
4.	3-818-V94-S04-0.0-110614ZJ41D	14-24305		Soil	11/06/14 11:15	11/06/14 15:13
5.	3-818-V94-S05-0.0-110614ZJ41E	14-24306		Soil	11/06/14 11:20	11/06/14 15:13
6.	3-818-V94-S06-0.0-110614ZJ41F	14-24307		Soil	11/06/14 11:25	11/06/14 15:13
7.	3-818-V94-S07-0.0-110614ZJ41G	14-24308		Soil	11/06/14 11:30	11/06/14 15:13
8.	3-818-V94-S08-0.0-110614ZJ41H	14-24309		Soil	11/06/14 11:35	11/06/14 15:13
9.	3-818-V94-S09-0.0-110614ZJ41I	14-24310		Soil	11/06/14 11:40	11/06/14 15:13
10.	3-818-V94-S10-0.0-110614ZJ41J	14-24311		Soil	11/06/14 11:45	11/06/14 15:13
11.	3-818-V94-S11-0.0-110614ZJ41K	14-24312		Soil	11/06/14 11:50	11/06/14 15:13
12.	3-818-V94-S12-0.0-110614ZJ41L	14-24313		Soil	11/06/14 11:55	11/06/14 15:13
13.	3-818-V94-S13-0.0-110614ZJ41M	14-24314		Soil	11/06/14 12:00	11/06/14 15:13
14.	3-818-V94-S14-0.5-110614ZJ41N	14-24315		Soil	11/06/14 12:05	11/06/14 15:13
15.	3-818-V94-S15-0.0-110614ZJ41O	14-24316		Soil	11/06/14 12:10	11/06/14 15:13
16.	3-818-V94-S16-0.0-110614ZJ41P	14-24317		Soil	11/06/14 12:15	11/06/14 15:13
17.	3-818-V94-S17-0.0-110614ZJ41Q	14-24318		Soil	11/06/14 12:20	11/06/14 15:13
18.	3-818-V94-S18-0.0-110614ZJ41R	14-24319		Soil	11/06/14 12:25	11/06/14 15:13

ZJ41 : 0025082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S01-0.0-110614
SAMPLE

Lab Sample ID: ZJ41A
LIMS ID: 14-24302
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 15:25
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 8.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	120	< 120 Y
11096-82-5	**Aroclor 1260**	**31**	**580 E**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.2%
Tetrachlorometaxylene	78.2%

ZJ41 : 00005

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S01-0.0-110614
DILUTION

Lab Sample ID: ZJ41A
LIMS ID: 14-24302
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 08:35
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 8.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**590**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	103%
Tetrachlorometaxylene	78.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S02-0.0-110614
SAMPLE

Lab Sample ID: ZJ41B
LIMS ID: 14-24303
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 15:45
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	220	< 220 Y
11096-82-5	**Aroclor 1260**	**32**	**1,100 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.8%
Tetrachlorometaxylene	74.2%

ZJ41 : 00007

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S02-0.0-110614
DILUTION

Lab Sample ID: ZJ41B
LIMS ID: 14-24303
Matrix: Soil
Data Release Authorized: mw
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 08:54
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 9.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	320	< 320 U
53469-21-9	Aroclor 1242	320	< 320 U
12672-29-6	Aroclor 1248	320	< 320 U
11097-69-1	Aroclor 1254	320	< 320 U
11096-82-5	**Aroclor 1260**	**320**	**1,300**
11104-28-2	Aroclor 1221	320	< 320 U
11141-16-5	Aroclor 1232	320	< 320 U
37324-23-5	Aroclor 1262	320	< 320 U
11100-14-4	Aroclor 1268	320	< 320 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	99.8%
Tetrachlorometaxylene	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S03-0.0-110614
SAMPLE

Lab Sample ID: ZJ41C
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 16:04
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	**Aroclor 1260**	**32**	**110**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.0%
Tetrachlorometaxylene	75.0%

FORM I

ZJ41 : 000089

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S03-0.0-110614
MATRIX SPIKE

Lab Sample ID: ZJ41C
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 16:24
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.8%
Tetrachlorometaxylene	82.2%

FORM I

ZJ41 : 00018

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S03-0.0-110614
MATRIX SPIKE DUP

Lab Sample ID: ZJ41C
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 16:43
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.2%
Tetrachlorometaxylene	81.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S04-0.0-110614
SAMPLE

Lab Sample ID: ZJ41D
LIMS ID: 14-24305
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 17:03
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	**Aroclor 1260**	**32**	**100**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.2%
Tetrachlorometaxylene	77.2%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S05-0.0-110614
SAMPLE

Lab Sample ID: ZJ41E
LIMS ID: 14-24306
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 17:23
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	190	< 190 Y
11096-82-5	**Aroclor 1260**	**32**	**610 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.2%
Tetrachlorometaxylene	78.0%

ZJ41 : 00013

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S05-0.0-110614
DILUTION

Lab Sample ID: ZJ41E
LIMS ID: 14-24306
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 09:14
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 10.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	240	< 240 Y
11096-82-5	**Aroclor 1260**	**160**	**650**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.6%
Tetrachlorometaxylene	79.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S06-0.0-110614
SAMPLE

Lab Sample ID: ZJ41F
LIMS ID: 14-24307
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 17:42
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.9 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	**Aroclor 1260**	**31**	**150**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	65.5%
Tetrachlorometaxylene	63.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S07-0.0-110614
SAMPLE

Lab Sample ID: ZJ41G
LIMS ID: 14-24308
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 18:02
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	**Aroclor 1260**	**33**	**91**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	65.0%
Tetrachlorometaxylene	63.0%

FORM I

ZJ41 : 00016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S08-0.0-110614
SAMPLE

Lab Sample ID: ZJ41H
LIMS ID: 14-24309
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 18:21
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	63	< 63 Y
11096-82-5	**Aroclor 1260**	**32**	**400 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.2%
Tetrachlorometaxylene	75.5%

FORM I

ZJ41 : 00017

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546

Sample ID: 3-818-V94-S08-0.0-110614
DILUTION

Lab Sample ID: ZJ41H
LIMS ID: 14-24309
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 09:33
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**440**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.5%
Tetrachlorometaxylene	79.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S09-0.0-110614
SAMPLE

Lab Sample ID: ZJ41I
LIMS ID: 14-24310
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 18:41
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	410	< 410 YE
11096-82-5	**Aroclor 1260**	**32**	**1,200 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.5%
Tetrachlorometaxylene	78.2%

FORM I

ZJ41 : 00013

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S09-0.0-110614
DILUTION

Lab Sample ID: ZJ41I
LIMS ID: 14-24310
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 09:53
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 10.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	320	< 320 U
53469-21-9	Aroclor 1242	320	< 320 U
12672-29-6	Aroclor 1248	320	< 320 U
11097-69-1	Aroclor 1254	480	< 480 Y
11096-82-5	**Aroclor 1260**	**320**	**1,400**
11104-28-2	Aroclor 1221	320	< 320 U
11141-16-5	Aroclor 1232	320	< 320 U
37324-23-5	Aroclor 1262	320	< 320 U
11100-14-4	Aroclor 1268	320	< 320 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	103%
Tetrachlorometaxylene	82.5%

ZJ41I : 0025082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S10-0.0-110614
SAMPLE

Lab Sample ID: ZJ41J
LIMS ID: 14-24311
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 19:00
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	260	< 260 Y
11096-82-5	**Aroclor 1260**	**32**	**1,300 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	73.2%
Tetrachlorometaxylene	77.5%

ZJ41 : 000021

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S10-0.0-110614
DILUTION

Lab Sample ID: ZJ41J
LIMS ID: 14-24311
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 10:12
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 10.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	320	< 320 U
53469-21-9	Aroclor 1242	320	< 320 U
12672-29-6	Aroclor 1248	320	< 320 U
11097-69-1	Aroclor 1254	320	< 320 U
11096-82-5	**Aroclor 1260**	**320**	**1,600**
11104-28-2	Aroclor 1221	320	< 320 U
11141-16-5	Aroclor 1232	320	< 320 U
37324-23-5	Aroclor 1262	320	< 320 U
11100-14-4	Aroclor 1268	320	< 320 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.2%
Tetrachlorometaxylene	81.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S11-0.0-110614
SAMPLE

Lab Sample ID: ZJ41K
LIMS ID: 14-24312
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 19:59
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	260	< 260 Y
11096-82-5	**Aroclor 1260**	**32**	**820 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	78.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S11-0.0-110614
DILUTION

Lab Sample ID: ZJ41K
LIMS ID: 14-24312
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 10:32
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 10.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	320	< 320 Y
11096-82-5	**Aroclor 1260**	**160**	**880**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.9%
Tetrachlorometaxylene	80.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S12-0.0-110614
SAMPLE

Lab Sample ID: ZJ41L
LIMS ID: 14-24313
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 20:19
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	63	< 63 Y
11096-82-5	**Aroclor 1260**	**31**	**180**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	71.8%
Tetrachlorometaxylene	69.8%

ZJ41 : 0025

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S13-0.0-110614
SAMPLE

Lab Sample ID: ZJ41M
LIMS ID: 14-24314
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 20:38
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	**Aroclor 1260**	**31**	**51**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.0%
Tetrachlorometaxylene	74.2%

FORM I

ZJ41 : 0025082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S14-0.5-110614
SAMPLE

Lab Sample ID: ZJ41N
LIMS ID: 14-24315
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 20:58
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	260	< 260 Y
11096-82-5	**Aroclor 1260**	**32**	**940 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.2%
Tetrachlorometaxylene	82.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S14-0.5-110614
DILUTION

Lab Sample ID: ZJ41N
LIMS ID: 14-24315
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/10/14 07:17
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	320	< 320 U
53469-21-9	Aroclor 1242	320	< 320 U
12672-29-6	Aroclor 1248	320	< 320 U
11097-69-1	Aroclor 1254	320	< 320 U
11096-82-5	**Aroclor 1260**	**320**	**1,100**
11104-28-2	Aroclor 1221	320	< 320 U
11141-16-5	Aroclor 1232	320	< 320 U
37324-23-5	Aroclor 1262	320	< 320 U
11100-14-4	Aroclor 1268	320	< 320 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	90.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S15-0.0-110614
SAMPLE

Lab Sample ID: ZJ410
LIMS ID: 14-24316
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 21:17
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	**Aroclor 1260**	**32**	**100**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.0%
Tetrachlorometaxylene	80.2%

FORM I

ZJ41 : 00029

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S16-0.0-110614
SAMPLE

Lab Sample ID: ZJ41P
LIMS ID: 14-24317
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 21:37
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.5%
Tetrachlorometaxylene	72.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S17-0.0-110614
SAMPLE

Lab Sample ID: ZJ41Q
LIMS ID: 14-24318
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 21:57
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	97	< 97 Y
11096-82-5	**Aroclor 1260**	**32**	**290**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.5%
Tetrachlorometaxylene	77.2%

ZJ41 : 00031

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S18-0.0-110614
SAMPLE

Lab Sample ID: ZJ41R
LIMS ID: 14-24319
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 22:16
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	990	< 990 YE
11096-82-5	**Aroclor 1260**	**33**	**2,600 ESP**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.5%
Tetrachlorometaxylene	72.0%

ZJ41 : 00032

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S18-0.0-110614
DILUTION

Lab Sample ID: ZJ41R
LIMS ID: 14-24319
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 11:11
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 20.0
Silica Gel: No

Percent Moisture: 13.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	660	< 660 U
53469-21-9	Aroclor 1242	660	< 660 U
12672-29-6	Aroclor 1248	660	< 660 U
11097-69-1	Aroclor 1254	1,300	< 1,300 Y
11096-82-5	**Aroclor 1260**	**660**	**3,000**
11104-28-2	Aroclor 1221	660	< 660 U
11141-16-5	Aroclor 1232	660	< 660 U
37324-23-5	Aroclor 1262	660	< 660 U
11100-14-4	Aroclor 1268	660	< 660 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	97.5%
Tetrachlorometaxylene	89.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-110714
METHOD BLANK

Lab Sample ID: MB-110714
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 14:26
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	79.5%
Tetrachlorometaxylene	81.0%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
3-818-V94-S01-0.0-110614	90.2%	47-120	78.2%	53-116	0
3-818-V94-S01-0.0-110614 DL	103%	47-120	78.6%	53-116	0
3-818-V94-S02-0.0-110614	76.8%	47-120	74.2%	53-116	0
3-818-V94-S02-0.0-110614 DL	99.8%	47-120	85.0%	53-116	0
MB-110714	79.5%	59-115	81.0%	58-112	0
LCS-110714	75.8%	59-115	75.8%	58-112	0
LCSD-110714	81.5%	59-115	80.5%	58-112	0
3-818-V94-S03-0.0-110614	78.0%	47-120	75.0%	53-116	0
3-818-V94-S03-0.0-110614 MS	79.8%	47-120	82.2%	53-116	0
3-818-V94-S03-0.0-110614 MSD	78.2%	47-120	81.2%	53-116	0
3-818-V94-S04-0.0-110614	76.2%	47-120	77.2%	53-116	0
3-818-V94-S05-0.0-110614	79.2%	47-120	78.0%	53-116	0
3-818-V94-S05-0.0-110614 DL	85.6%	47-120	79.4%	53-116	0
3-818-V94-S06-0.0-110614	65.5%	47-120	63.5%	53-116	0
3-818-V94-S07-0.0-110614	65.0%	47-120	63.0%	53-116	0
3-818-V94-S08-0.0-110614	77.2%	47-120	75.5%	53-116	0
3-818-V94-S08-0.0-110614 DL	95.5%	47-120	79.5%	53-116	0
3-818-V94-S09-0.0-110614	77.5%	47-120	78.2%	53-116	0
3-818-V94-S09-0.0-110614 DL	103%	47-120	82.5%	53-116	0
3-818-V94-S10-0.0-110614	73.2%	47-120	77.5%	53-116	0
3-818-V94-S10-0.0-110614 DL	95.2%	47-120	81.2%	53-116	0
3-818-V94-S11-0.0-110614	79.0%	47-120	78.0%	53-116	0
3-818-V94-S11-0.0-110614 DL	89.9%	47-120	80.4%	53-116	0
3-818-V94-S12-0.0-110614	71.8%	47-120	69.8%	53-116	0
3-818-V94-S13-0.0-110614	77.0%	47-120	74.2%	53-116	0
3-818-V94-S14-0.5-110614	80.2%	47-120	82.2%	53-116	0
3-818-V94-S14-0.5-110614 DL	100%	47-120	90.5%	53-116	0
3-818-V94-S15-0.0-110614	80.0%	47-120	80.2%	53-116	0
3-818-V94-S16-0.0-110614	73.5%	47-120	72.8%	53-116	0
3-818-V94-S17-0.0-110614	76.5%	47-120	77.2%	53-116	0
3-818-V94-S18-0.0-110614	73.5%	47-120	72.0%	53-116	0
3-818-V94-S18-0.0-110614 DL	97.5%	47-120	89.0%	53-116	0

Microwave (MARS) Control Limits PCBSMI
Prep Method: SW3546
Log Number Range: 14-24302 to 14-24319

FORM-II SW8082

ZJ41 : 0025082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: 3-818-V94-S03-0.0-110614
MS/MSD

Lab Sample ID: ZJ41C
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted MS/MSD: 11/07/14

Sample Amount MS: 12.7 g-dry-wt
MSD: 12.7 g-dry-wt
Date Analyzed MS: 11/08/14 16:24
MSD: 11/08/14 16:43
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Instrument/Analyst MS: ECD5/JGR
MSD: ECD5/JGR
Dilution Factor MS: 1.00
MSD: 1.00
GPC Cleanup: No
Silica Gel: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No
Percent Moisture: 9.7%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 32 U	122	158	77.2%	124	158	78.5%	1.6%
Aroclor 1260	110	199	158	56.3%	194	158	53.2%	2.5%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-110714
LCS/LCSD

Lab Sample ID: LCS-110714
LIMS ID: 14-24304
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ41-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 11/07/14

Date Analyzed LCS: 11/08/14 14:46
LCSD: 11/08/14 15:06
Instrument/Analyst LCS: ECD5/JGR
LCSD: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount LCS: 12.0 g-dry-wt
LCSD: 12.0 g-dry-wt
Final Extract Volume LCS: 4.00 mL
LCSD: 4.00 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	120	167	71.9%	132	167	79.0%	9.5%
Aroclor 1260	123	167	73.7%	132	167	79.0%	7.1%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	75.8%	81.5%
Tetrachlorometaxylene	75.8%	80.5%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 10, 2014

Anne Halvorsen
Landau Associates, Inc.,
130 – 2nd Avenue
Edmonds, WA 98020

RE: Project: NBF 3-822 Main Fuel Farm
ARI Job: ZJ42

Dear Anne:

Please find enclosed original Chain of Custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eighteen samples in good condition on November 6, 2014.

The samples were analyzed for PCBs, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211

Enclosure

cc: Carl Bach, The Boeing Company, P.O. Box 3707, M/S 1W-12, Seattle, WA 98124-2207

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

LANDAU ASSOCIATES

☒ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (503) 542-1080
☐ _____

ZJ42

Date 11/6/14
Page 2 of 2

Chain-of-Custody Record

Project Name 3-818 V94 Substation Removal Project No. 002508.214.005
Project Location/Event NBF/V94 Substation
Sampler's Name Al Starr, Rosemary Trimmer
Project Contact Colette Gaona
Send Results To Carl Bach, Colette Gaona, Anne Halvorsen

Testing Parameters: PCBs

Turnaround Time
☐ Standard
☒ Accelerated
☐ 24 hr TAT

Sample I.D.	Date	Time	Matrix	No. of Containers	PCBs
3-818-V94-S19-0.0-110614	11/6/14	1230	Soil	1	X
3-818-V94-S20-0.0-110614		1235		1	X
3-818-V94-S21-0.0-110614		1240		1	X
3-818-V94-S22-0.0-110614		1245		1	X
3-818-V94-S23-0.0-110614		1250		1	X
3-818-V94-S24-0.0-110614		1255		1	X
3-818-V94-S25-0.0-110614		1300		1	X
3-818-V94-S26-0.5-110614		1305		1	X
3-818-V94-S27-0.5-110614		1335		1	X
3-818-V94-S28-0.5-110614		1340		1	X
3-818-V94-S29-0.0-110614		1345		1	X
3-818-V94-S30-0.0-110614		1350		1	X
3-818-V94-S31-0.0-110614		1355		1	X
3-818-V94-S32-0.0-110614		1400		1	X
3-818-V94-S33-0.0-110614		1405		1	X
3-818-V94-S34-0.0-110614		1410		1	X
3-818-V94-S35-0.0-110614		1415		1	X
3-818-V94-S36-0.0-110614		1420		1	X

Observations/Comments
X ~~Allow water samples to settle, collect~~ aliquot from clear portion RWT
X ~~NWTPH-Dx - run acid wash/silica gel cleanup~~
___ run samples standardized to _____ product
___ Analyze for EPH if no specific product identified
VOC/BTEX/VPH (soil):
___ non-preserved
___ preserved w/methanol
___ preserved w/sodium bisulfate
___ Freeze upon receipt
___ Dissolved metal water samples field filtered
Other _____

Special Shipment/Handling or Storage Requirements mice

Method of Shipment deliver to lab

Relinquished by	Received by	Relinquished by	Received by
Signature Rosemary Trimmer	Signature A Volgardsen	Signature	Signature
Printed Name Rosemary Trimmer	Printed Name	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 11/6/14 Time 1513	Date 11/6/14 Time 1513	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 8/09

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Boeing
COC No(s): ______ (NA)
Assigned ARI Job No: ZJ42

Project Name: 3-818 VOC Substation
Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: ______
Tracking No. ______ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 5.7 5.3
Time. 1513
If cooler temperature is out of compliance fill out form 00070F   Temp Gun ID#: 90877959

Cooler Accepted by: [signature] Date: 11/11/14 Time: 1513

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: ______

Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	______	

Was Sample Split by ARI: (NA) YES Date/Time ______ Equipment: ______ Split by: ______

Samples Logged by: [signature] Date: 11/11/14 Time: 1515

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: ______ Date: ______

Small Air Bubbles ~2mm	Peabubbles' 2-4 mm	LARGE Air Bubbles > 4 mm

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZJ42
Client: The Boeing Company
Project Event: 0025082.214.005
Project Name: 3-818 V94 Substation Removal

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	3-818-V94-S19-0.0-110614ZJ42A	14-24320		Soil	11/06/14 12:30	11/06/14 15:13
2.	3-818-V94-S20-0.0-110614ZJ42B	14-24321		Soil	11/06/14 12:35	11/06/14 15:13
3.	3-818-V94-S21-0.0-110614ZJ42C	14-24322		Soil	11/06/14 12:40	11/06/14 15:13
4.	3-818-V94-S22-0.0-110614ZJ42D	14-24323		Soil	11/06/14 12:45	11/06/14 15:13
5.	3-818-V94-S23-0.0-110614ZJ42E	14-24324		Soil	11/06/14 12:50	11/06/14 15:13
6.	3-818-V94-S24-0.0-110614ZJ42F	14-24325		Soil	11/06/14 12:55	11/06/14 15:13
7.	3-818-V94-S25-0.0-110614ZJ42G	14-24326		Soil	11/06/14 13:00	11/06/14 15:13
8.	3-818-V94-S26-0.5-110614ZJ42H	14-24327		Soil	11/06/14 13:05	11/06/14 15:13
9.	3-818-V94-S27-0.5-110614ZJ42I	14-24328		Soil	11/06/14 13:35	11/06/14 15:13
10.	3-818-V94-S28-0.5-110614ZJ42J	14-24329		Soil	11/06/14 13:40	11/06/14 15:13
11.	3-818-V94-S29-0.0-110614ZJ42K	14-24330		Soil	11/06/14 13:45	11/06/14 15:13
12.	3-818-V94-S30-0.0-110614ZJ42L	14-24331		Soil	11/06/14 13:50	11/06/14 15:13
13.	3-818-V94-S31-0.0-110614ZJ42M	14-24332		Soil	11/06/14 13:55	11/06/14 15:13
14.	3-818-V94-S32-0.0-110614ZJ42N	14-24333		Soil	11/06/14 14:00	11/06/14 15:13
15.	3-818-V94-S33-0.0-110614ZJ42O	14-24334		Soil	11/06/14 14:05	11/06/14 15:13
16.	3-818-V94-S34-0.0-110614ZJ42P	14-24335		Soil	11/06/14 14:10	11/06/14 15:13
17.	3-818-V94-S35-0.0-110614ZJ42Q	14-24336		Soil	11/06/14 14:15	11/06/14 15:13
18.	3-818-V94-S36-0.0-110614ZJ42R	14-24337		Soil	11/06/14 14:20	11/06/14 15:13

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-110714
METHOD BLANK

Lab Sample ID: MB-110714
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted: 11/07/14
Date Analyzed: 11/08/14 23:15
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.2%
Tetrachlorometaxylene	88.5%

ZJ42 : 00005

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546

Sample ID: 3-818-V94-S19-0.0-110614
SAMPLE

Lab Sample ID: ZJ42A
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 00:14
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.8%
Tetrachlorometaxylene	87.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S19-0.0-110614
MATRIX SPIKE

Lab Sample ID: ZJ42A
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 00:33
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.2%
Tetrachlorometaxylene	74.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S19-0.0-110614
MATRIX SPIKE DUP

Lab Sample ID: ZJ42A
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 00:53
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.2%
Tetrachlorometaxylene	89.5%

ZJ42 : 0025082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S20-0.0-110614
SAMPLE

Lab Sample ID: ZJ42B
LIMS ID: 14-24321
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 01:13
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.2%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.0%
Tetrachlorometaxylene	93.0%

FORM I

ZJ42-00009

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S21-0.0-110614
SAMPLE

Lab Sample ID: ZJ42C
LIMS ID: 14-24322
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 01:32
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.2%
Tetrachlorometaxylene	74.2%

FORM I

ZJ42:00018

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S22-0.0-110614
SAMPLE

Lab Sample ID: ZJ42D
LIMS ID: 14-24323
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 01:52
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 15.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**210**
11096-82-5	**Aroclor 1260**	**31**	**420 E**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.5%
Tetrachlorometaxylene	89.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S22-0.0-110614
DILUTION

Lab Sample ID: ZJ42D
LIMS ID: 14-24323
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 12:10
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 15.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	**Aroclor 1254**	**160**	**200**
11096-82-5	**Aroclor 1260**	**160**	**420**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.8%
Tetrachlorometaxylene	79.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S23-0.0-110614
SAMPLE

Lab Sample ID: ZJ42E
LIMS ID: 14-24324
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 02:11
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	76.8%

FORM I

ZJ42:00043

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S24-0.0-110614
SAMPLE

Lab Sample ID: ZJ42F
LIMS ID: 14-24325
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 02:31
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 15.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**380 E**
11096-82-5	**Aroclor 1260**	**31**	**380 E**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.2%
Tetrachlorometaxylene	79.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S24-0.0-110614
DILUTION

Lab Sample ID: ZJ42F
LIMS ID: 14-24325
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 12:30
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 15.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	**Aroclor 1254**	**160**	**430**
11096-82-5	**Aroclor 1260**	**160**	**420**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.5%
Tetrachlorometaxylene	77.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S25-0.0-110614
SAMPLE

Lab Sample ID: ZJ42G
LIMS ID: 14-24326
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 02:51
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 16.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	64	< 64 Y
11097-69-1	**Aroclor 1254**	**32**	**1,600 ES**
11096-82-5	**Aroclor 1260**	**32**	**2,100 ES**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.8%
Tetrachlorometaxylene	77.0%

FORM I

ZJ42-00015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S25-0.0-110614
DILUTION

Lab Sample ID: ZJ42G
LIMS ID: 14-24326
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/10/14 07:37
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 16.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	800	< 800 U
53469-21-9	Aroclor 1242	800	< 800 U
12672-29-6	Aroclor 1248	800	< 800 U
11097-69-1	**Aroclor 1254**	**800**	**1,600**
11096-82-5	**Aroclor 1260**	**800**	**3,000**
11104-28-2	Aroclor 1221	800	< 800 U
11141-16-5	Aroclor 1232	800	< 800 U
37324-23-5	Aroclor 1262	800	< 800 U
11100-14-4	Aroclor 1268	800	< 800 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	106%
Tetrachlorometaxylene	82.5%

ZJ42:00017

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S26-0.5-110614
SAMPLE

Lab Sample ID: ZJ42H
LIMS ID: 14-24327
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 03:10
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 19.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	**Aroclor 1254**	**33**	**340 E**
11096-82-5	**Aroclor 1260**	**33**	**580 E**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	79.8%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S26-0.5-110614
DILUTION

Lab Sample ID: ZJ42H
LIMS ID: 14-24327
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 13:09
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 19.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	**Aroclor 1254**	**160**	**380**
11096-82-5	**Aroclor 1260**	**160**	**770**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	120%
Tetrachlorometaxylene	78.9%

ZJ42 : 00049

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S27-0.5-110614
SAMPLE

Lab Sample ID: ZJ42I
LIMS ID: 14-24328
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 03:30
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 17.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	130	< 130 Y
11096-82-5	**Aroclor 1260**	**32**	**480 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	78.8%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S27-0.5-110614
DILUTION

Lab Sample ID: ZJ42I
LIMS ID: 14-24328
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 13:28
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 17.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**560**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	99.9%
Tetrachlorometaxylene	84.1%

FORM I

ZJ42 : 100822

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S28-0.5-110614
SAMPLE

Lab Sample ID: ZJ42J
LIMS ID: 14-24329
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 03:50
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 17.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	390	< 390 YE
11096-82-5	**Aroclor 1260**	**32**	**1,000 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.2%
Tetrachlorometaxylene	79.0%

FORM I

ZJ42 : 00022

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S28-0.5-110614
DILUTION

Lab Sample ID: ZJ42J
LIMS ID: 14-24329
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 13:48
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 17.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	480	< 480 Y
11096-82-5	**Aroclor 1260**	**160**	**1,300**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	98.9%
Tetrachlorometaxylene	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S29-0.0-110614
SAMPLE

Lab Sample ID: ZJ42K
LIMS ID: 14-24330
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 04:48
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.2%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	79	< 79 Y
11096-82-5	**Aroclor 1260**	**32**	**310**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.8%
Tetrachlorometaxylene	78.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S30-0.0-110614
SAMPLE

Lab Sample ID: ZJ42L
LIMS ID: 14-24331
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 05:08
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	40	< 40 Y
11096-82-5	**Aroclor 1260**	**32**	**180**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	82.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S31-0.0-110614
SAMPLE

Lab Sample ID: ZJ42M
LIMS ID: 14-24332
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 05:27
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	96	< 96 Y
11096-82-5	**Aroclor 1260**	**32**	**420 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.5%
Tetrachlorometaxylene	78.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S31-0.0-110614
DILUTION

Lab Sample ID: ZJ42M
LIMS ID: 14-24332
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 14:08
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 11.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**460**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	80.4%

ZJ42 : 00027

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S32-0.0-110614
SAMPLE

Lab Sample ID: ZJ42N
LIMS ID: 14-24333
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 05:47
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	95	< 95 Y
11096-82-5	**Aroclor 1260**	**32**	**450 E**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.0%
Tetrachlorometaxylene	82.2%

ZJ42:088525

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S32-0.0-110614
DILUTION

Lab Sample ID: ZJ42N
LIMS ID: 14-24333
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 14:27
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 10.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	160	< 160 U
11096-82-5	**Aroclor 1260**	**160**	**550**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	101%
Tetrachlorometaxylene	89.0%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S33-0.0-110614
SAMPLE

Lab Sample ID: ZJ420
LIMS ID: 14-24334
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 06:06
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	48	< 48 Y
11096-82-5	**Aroclor 1260**	**32**	**180**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.0%
Tetrachlorometaxylene	81.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S34-0.0-110614
SAMPLE

Lab Sample ID: ZJ42P
LIMS ID: 14-24335
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 06:26
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.2%
Tetrachlorometaxylene	81.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S35-0.0-110614
SAMPLE

Lab Sample ID: ZJ42Q
LIMS ID: 14-24336
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 06:46
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	260	< 260 Y
11097-69-1	**Aroclor 1254**	**33**	**3,800 ES**
11096-82-5	**Aroclor 1260**	**33**	**1,000 ES**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.5%
Tetrachlorometaxylene	83.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S35-0.0-110614
DILUTION

Lab Sample ID: ZJ42Q
LIMS ID: 14-24336
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 14:47
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 12.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	820	< 820 U
53469-21-9	Aroclor 1242	820	< 820 U
12672-29-6	Aroclor 1248	820	< 820 U
11097-69-1	**Aroclor 1254**	**820**	**4,600**
11096-82-5	**Aroclor 1260**	**820**	**1,600**
11104-28-2	Aroclor 1221	820	< 820 U
11141-16-5	Aroclor 1232	820	< 820 U
37324-23-5	Aroclor 1262	820	< 820 U
11100-14-4	Aroclor 1268	820	< 820 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	D
Tetrachlorometaxylene	D

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S36-0.0-110614
SAMPLE

Lab Sample ID: ZJ42R
LIMS ID: 14-24337
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/09/14 07:05
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 17.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	64	< 64 Y
11097-69-1	Aroclor 1254	1,600	< 1,600 YE
11096-82-5	**Aroclor 1260**	**32**	**3,700 ES**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	Aroclor 1268	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	NR
Tetrachlorometaxylene	86.8%

FORM I

ZJ42:00031

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S36-0.0-110614
DILUTION

Lab Sample ID: ZJ42R
LIMS ID: 14-24337
Matrix: Soil
Data Release Authorized: MW
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted: 11/07/14
Date Analyzed: 11/10/14 07:56
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 50.0
Silica Gel: No

Percent Moisture: 17.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	1,600	< 1,600 U
53469-21-9	Aroclor 1242	1,600	< 1,600 U
12672-29-6	Aroclor 1248	1,600	< 1,600 U
11097-69-1	Aroclor 1254	2,000	< 2,000 Y
11096-82-5	**Aroclor 1260**	**1,600**	**8,100**
11104-28-2	Aroclor 1221	1,600	< 1,600 U
11141-16-5	Aroclor 1232	1,600	< 1,600 U
37324-23-5	Aroclor 1262	1,600	< 1,600 U
11100-14-4	Aroclor 1268	1,600	< 1,600 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	D
Tetrachlorometaxylene	D

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005

Client ID		DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-110714		86.2%	59-115	88.5%	58-112	0
LCS-110714		84.2%	59-115	83.5%	58-112	0
LCSD-110714		84.5%	59-115	86.8%	58-112	0
3-818-V94-S19-0.0-110614		77.8%	47-120	87.2%	53-116	0
3-818-V94-S19-0.0-110614	MS	73.2%	47-120	74.8%	53-116	0
3-818-V94-S19-0.0-110614	MSD	86.2%	47-120	89.5%	53-116	0
3-818-V94-S20-0.0-110614		90.0%	47-120	93.0%	53-116	0
3-818-V94-S21-0.0-110614		72.2%	47-120	74.2%	53-116	0
3-818-V94-S22-0.0-110614		80.5%	47-120	89.2%	53-116	0
3-818-V94-S22-0.0-110614	DL	86.8%	47-120	79.6%	53-116	0
3-818-V94-S23-0.0-110614		75.8%	47-120	76.8%	53-116	0
3-818-V94-S24-0.0-110614		72.2%	47-120	79.0%	53-116	0
3-818-V94-S24-0.0-110614	DL	88.5%	47-120	77.9%	53-116	0
3-818-V94-S25-0.0-110614		73.8%	47-120	77.0%	53-116	0
3-818-V94-S25-0.0-110614	DL	106%	47-120	82.5%	53-116	0
3-818-V94-S26-0.5-110614		75.8%	47-120	79.8%	53-116	0
3-818-V94-S26-0.5-110614	DL	120%	47-120	78.9%	53-116	0
3-818-V94-S27-0.5-110614		79.0%	47-120	78.8%	53-116	0
3-818-V94-S27-0.5-110614	DL	99.9%	47-120	84.1%	53-116	0
3-818-V94-S28-0.5-110614		73.2%	47-120	79.0%	53-116	0
3-818-V94-S28-0.5-110614	DL	98.9%	47-120	85.0%	53-116	0
3-818-V94-S29-0.0-110614		72.8%	47-120	78.5%	53-116	0
3-818-V94-S30-0.0-110614		78.8%	47-120	82.2%	53-116	0
3-818-V94-S31-0.0-110614		77.5%	47-120	78.8%	53-116	0
3-818-V94-S31-0.0-110614	DL	100%	47-120	80.4%	53-116	0
3-818-V94-S32-0.0-110614		85.0%	47-120	82.2%	53-116	0
3-818-V94-S32-0.0-110614	DL	101%	47-120	89.0%	53-116	0
3-818-V94-S33-0.0-110614		80.0%	47-120	81.2%	53-116	0
3-818-V94-S34-0.0-110614		78.2%	47-120	81.2%	53-116	0
3-818-V94-S35-0.0-110614		95.5%	47-120	83.2%	53-116	0
3-818-V94-S35-0.0-110614	DL	D	47-120	D	53-116	0
3-818-V94-S36-0.0-110614		NR	47-120	86.8%	53-116	0
3-818-V94-S36-0.0-110614	DL	D	47-120	D	53-116	0

Microwave (MARS) Control Limits PCBSMI
Prep Method: SW3546
Log Number Range: 14-24320 to 14-24337

ZJ42:000026

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: 3-818-V94-S19-0.0-110614
MS/MSD

Lab Sample ID: ZJ42A
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/06/14
Date Received: 11/06/14

Date Extracted MS/MSD: 11/07/14

Date Analyzed MS: 11/09/14 00:33
MSD: 11/09/14 00:53
Instrument/Analyst MS: ECD5/JGR
MSD: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 12.4 g-dry-wt
MSD: 12.4 g-dry-wt
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 11.8%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 32 U	119	162	73.5%	139	162	85.8%	15.5%
Aroclor 1260	< 32 U	117	162	72.2%	142	162	87.7%	19.3%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-110714
LCS/LCSD

Lab Sample ID: LCS-110714
LIMS ID: 14-24320
Matrix: Soil
Data Release Authorized:
Reported: 11/10/14

QC Report No: ZJ42-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 11/07/14
Date Analyzed LCS: 11/08/14 23:35
LCSD: 11/08/14 23:54
Instrument/Analyst LCS: ECD5/JGR
LCSD: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount LCS: 12.0 g-dry-wt
LCSD: 12.0 g-dry-wt
Final Extract Volume LCS: 4.00 mL
LCSD: 4.00 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	133	167	79.6%	140	167	83.8%	5.1%
Aroclor 1260	132	167	79.0%	135	167	80.8%	2.2%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	84.2%	84.5%
Tetrachlorometaxylene	83.5%	86.8%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 17, 2014

Anne Halvorsen
Landau Associates, Inc.,
130 – 2nd Avenue
Edmonds, WA 98020

RE: Project: NBF 3-818 V94 Substation Removal
ARI Job: ZK42

Dear Anne:

Please find enclosed original Chain of Custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted nineteen samples in good condition on November 14, 2014.

The samples were analyzed for PCBs, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

for

Kelly Bottem
Client Services Manager
(206) 695-6211

Enclosure

cc: Carl Bach, The Boeing Company, P.O. Box 3707, M/S 1W-12, Seattle, WA 98124-2207

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: ZK42	Turn-around Requested: 24-hr	Page: 1 of 2	
ARI Client Company: Boeing/Landau	Phone: 425-778-0907	Date: 11/14/14	Ice Present? Y
Client Contact: Colette Gaona		No. of Coolers: 1	Cooler Temps: 2.8
Client Project Name: NBF3-818 V94 Substation Removal			
Client Project #: 0025082.214.005	Samplers: Rosemary Trimmer		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PCBs	Notes/Comments
3-818-V94-S02-1.0-111414	11/14/14	0940	soil	1	X	
3-818-V94-S37-1.0-111414		0945		1	X	
3-818-V94-S10-1.0-111414		1000		1	X	
3-818-V94-S38-1.0-111414		1005		1	X	
3-818-V94-S35-1.0-111414		1010		1	X	
3-818-V94-S39-1.0-111414		1020		1	X	
3-818-V94-S25-1.0-111414		1025		1	X	
3-818-V94-S40-1.0-111414		1030		1	X	
3-818-V94-S36-1.0-111414		1035		1	X	
3-818-V94-S41-1.0-111414		1040		1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
send results to Colette Gaona, Carl Buch, Anne Halvorsen	Printed Name: Rosemary Trimmer	Printed Name: Jennifer Mitchell	Printed Name:	Printed Name:
	Company: Landau Associates	Company: ARI	Company:	Company:
	Date & Time: 11/14/14 1408	Date & Time: 11/14/14 1408	Date & Time:	Date & Time:

ZK42 : 00025082

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: ZK42	Turn-around Requested: 24-hr	Page: 2 of 2	
ARI Client Company: Boeing / Landau	Phone: 425-778-0907	Date: 11/14/14	Ice Present? Y
Client Contact: Colette Grana		No. of Coolers: 1	Cooler Temps: 2.8
Client Project Name: NBF 3-818 V94 Substation Removal			
Client Project #: 0025082.214.005	Samplers: Rosemary Trimmer		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: PCBs	Notes/Comments
3-818-V94-S26-1.0-111414	11/14/14	1045	Soil	1	X	
3-818-V94-S43-1.0-111414	"	1145	"	1	X	
3-818-V94-S44-2.0-111414	"	1200	"	1	X	
3-818-V94-S42-0.0-111414	"	1210	"	1	X	
3-818-V94-S18-1.5-111414	"	1220	"	1	X	
3-818-V94-S14-1.5-111414	"	1225	"	1	X	
3-818-V94-S09-1.5-111414	"	1230	"	1	X	
3-818-V94-S45-1.0-111414	"	1235	"	1	X	
3-818-V94-S28-2.0-111414	"	1245	"	1	X	
	↓ PWT		↓ PWT	1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Send results to Colette Grana, Carl Bach, Anne Halvorsen	Rosemary Trimmer	Jennifer Mittsop		
	Printed Name: Rosemary Trimmer	Printed Name:	Printed Name:	Printed Name:
	Company: Landau Associates	Company: ARI	Company:	Company:
	Date & Time: 11/14/14 1408	Date & Time: 11/14/14 1408	Date & Time:	Date & Time:

ZK42 00003

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Boeing
COC No(s): (NA)
Assigned ARI Job No: ZK42

Project Name: NBF 3-818 V94 Substation
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: Romero
Tracking No: (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 2.8
Time:
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 90870502

Cooler Accepted by: JM Date: 11/14/14 Time: 1408

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: Equipment: Split by:

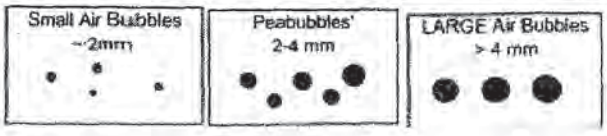
Samples Logged by: JM Date: 11/14/14 Time: 1410

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZK42
Client: The Boeing Company
Project Event: 0025082.214.005
Project Name: NBF 3-818 V94 Substation Removal

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	3-818-V94-S02-1.0-111414ZK42A		14-24828	Soil	11/14/14 09:40	11/14/14 14:08
2.	3-818-V94-S37-1.0-111414ZK42B		14-24829	Soil	11/14/14 09:45	11/14/14 14:08
3.	3-818-V94-S10-1.0-111414ZK42C		14-24830	Soil	11/14/14 10:00	11/14/14 14:08
4.	3-818-V94-S38-1.0-111414ZK42D		14-24831	Soil	11/14/14 10:05	11/14/14 14:08
5.	3-818-V94-S35-1.0-111414ZK42E		14-24832	Soil	11/14/14 10:10	11/14/14 14:08
6.	3-818-V94-S39-1.0-111414ZK42F		14-24833	Soil	11/14/14 10:20	11/14/14 14:08
7.	3-818-V94-S25-1.0-111414ZK42G		14-24834	Soil	11/14/14 10:25	11/14/14 14:08
8.	3-818-V94-S40-1.0-111414ZK42H		14-24835	Soil	11/14/14 10:30	11/14/14 14:08
9.	3-818-V94-S36-1.0-111414ZK42I		14-24836	Soil	11/14/14 10:35	11/14/14 14:08
10.	3-818-V94-S41-1.0-111414ZK42J		14-24837	Soil	11/14/14 10:40	11/14/14 14:08
11.	3-818-V94-S26-1.0-111414ZK42K		14-24838	Soil	11/14/14 10:45	11/14/14 14:08
12.	3-818-V94-S43-1.0-111414ZK42L		14-24839	Soil	11/14/14 11:45	11/14/14 14:08
13.	3-818-V94-S44-2.0-111414ZK42M		14-24840	Soil	11/14/14 12:00	11/14/14 14:08
14.	3-818-V94-S42-0.0-111414ZK42N		14-24841	Soil	11/14/14 12:10	11/14/14 14:08
15.	3-818-V94-S18-1.5-111414ZK42O		14-24842	Soil	11/14/14 12:20	11/14/14 14:08
16.	3-818-V94-S14-1.5-111414ZK42P		14-24843	Soil	11/14/14 12:25	11/14/14 14:08
17.	3-818-V94-S09-1.5-111414ZK42Q		14-24844	Soil	11/14/14 12:30	11/14/14 14:08
18.	3-818-V94-S45-1.0-111414ZK42R		14-24845	Soil	11/14/14 12:35	11/14/14 14:08
19.	3-818-V94-S28-2.0-111414ZK42S		14-24846	Soil	11/14/14 12:45	11/14/14 14:08

11/19/14
ZK42:0005..Rev

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S02-1.0-111414
SAMPLE

Lab Sample ID: ZK42A
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 21:50
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	Aroclor 1260	30	< 30 U
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	74.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S37-1.0-111414
SAMPLE

Lab Sample ID: ZK42B
LIMS ID: 14-24829
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 22:48
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	88	< 88 Y
11096-82-5	**Aroclor 1260**	**29**	**340 E**
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	79.2%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S37-1.0-111414
DILUTION

Lab Sample ID: ZK42B
LIMS ID: 14-24829
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 08:17
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	Aroclor 1254	150	< 150 U
11096-82-5	**Aroclor 1260**	**150**	**370**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	97.5%
Tetrachlorometaxylene	87.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S10-1.0-111414
SAMPLE

Lab Sample ID: ZK42C
LIMS ID: 14-24830
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 23:07
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	29	< 29 U
11096-82-5	Aroclor 1260	29	< 29 U
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.8%
Tetrachlorometaxylene	74.5%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S38-1.0-111414
SAMPLE

Lab Sample ID: ZK42D
LIMS ID: 14-24831
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 23:27
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	**Aroclor 1254**	**30**	**220**
11096-82-5	**Aroclor 1260**	**30**	**47**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	73.8%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S35-1.0-111414
SAMPLE

Lab Sample ID: ZK42E
LIMS ID: 14-24832
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 23:46
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 8.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	29	< 29 U
11096-82-5	Aroclor 1260	29	< 29 U
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.0%
Tetrachlorometaxylene	73.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S39-1.0-111414
SAMPLE

Lab Sample ID: ZK42F
LIMS ID: 14-24833
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 00:06
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 19.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	71.2%
Tetrachlorometaxylene	72.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S25-1.0-111414
SAMPLE

Lab Sample ID: ZK42G
LIMS ID: 14-24834
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 00:25
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	1,200	< 1,200 EY
11096-82-5	**Aroclor 1260**	**30**	**910 ES**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.2%
Tetrachlorometaxylene	79.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S25-1.0-111414
DILUTION

Lab Sample ID: ZK42G
LIMS ID: 14-24834
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 08:37
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 10.0
Silica Gel: No

Percent Moisture: 11.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	300	< 300 U
53469-21-9	Aroclor 1242	300	< 300 U
12672-29-6	Aroclor 1248	300	< 300 U
11097-69-1	Aroclor 1254	1,200	< 1,200 Y
11096-82-5	**Aroclor 1260**	**300**	**2,600**
11104-28-2	Aroclor 1221	300	< 300 U
11141-16-5	Aroclor 1232	300	< 300 U
37324-23-5	Aroclor 1262	300	< 300 U
11100-14-4	Aroclor 1268	300	< 300 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	116%
Tetrachlorometaxylene	83.0%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S40-1.0-111414
SAMPLE

Lab Sample ID: ZK42H
LIMS ID: 14-24835
Matrix: Soil
Data Release Authorized: WW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 00:44
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	**Aroclor 1254**	**30**	**120**
11096-82-5	**Aroclor 1260**	**30**	**240**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.5%
Tetrachlorometaxylene	77.0%

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PCB by GC/ECD Method SW8082A
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Sample ID: 3-818-V94-S36-1.0-111414
SAMPLE

Lab Sample ID: ZK42I
LIMS ID: 14-24836
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 01:42
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 10.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	**Aroclor 1254**	**30**	**150**
11096-82-5	**Aroclor 1260**	**30**	**450 E**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.2%
Tetrachlorometaxylene	80.0%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S36-1.0-111414
DILUTION

Lab Sample ID: ZK42I
LIMS ID: 14-24836
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 08:56
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 10.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**200**
11096-82-5	**Aroclor 1260**	**150**	**420**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	84.4%
Tetrachlorometaxylene	76.9%

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S41-1.0-111414
SAMPLE

Lab Sample ID: ZK42J
LIMS ID: 14-24837
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 02:02
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 11.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**930**
11096-82-5	**Aroclor 1260**	**150**	**1,700 E**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.1%
Tetrachlorometaxylene	76.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S41-1.0-111414
DILUTION

Lab Sample ID: ZK42J
LIMS ID: 14-24837
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 09:15
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 11.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	750	< 750 U
53469-21-9	Aroclor 1242	750	< 750 U
12672-29-6	Aroclor 1248	750	< 750 U
11097-69-1	**Aroclor 1254**	**750**	**1,000**
11096-82-5	**Aroclor 1260**	**750**	**1,700**
11104-28-2	Aroclor 1221	750	< 750 U
11141-16-5	Aroclor 1232	750	< 750 U
37324-23-5	Aroclor 1262	750	< 750 U
11100-14-4	Aroclor 1268	750	< 750 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	106%
Tetrachlorometaxylene	79.4%

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ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S26-1.0-111414
SAMPLE

Lab Sample ID: ZK42K
LIMS ID: 14-24838
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 02:21
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**1,200**
11096-82-5	**Aroclor 1260**	**150**	**5,500 ES**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	99.6%
Tetrachlorometaxylene	82.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S26-1.0-111414
DILUTION

Lab Sample ID: ZK42K
LIMS ID: 14-24838
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 09:35
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 50.0
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	1,500	< 1,500 U
53469-21-9	Aroclor 1242	1,500	< 1,500 U
12672-29-6	Aroclor 1248	1,500	< 1,500 U
11097-69-1	Aroclor 1254	1,500	< 1,500 U
11096-82-5	**Aroclor 1260**	**1,500**	**5,600**
11104-28-2	Aroclor 1221	1,500	< 1,500 U
11141-16-5	Aroclor 1232	1,500	< 1,500 U
37324-23-5	Aroclor 1262	1,500	< 1,500 U
11100-14-4	Aroclor 1268	1,500	< 1,500 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	D
Tetrachlorometaxylene	D

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S43-1.0-111414
SAMPLE

Lab Sample ID: ZK42L
LIMS ID: 14-24839
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 02:41
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**2,100 E**
11096-82-5	**Aroclor 1260**	**150**	**3,200 ES**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	101%
Tetrachlorometaxylene	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S43-1.0-111414
DILUTION

Lab Sample ID: ZK42L
LIMS ID: 14-24839
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 09:54
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	770	< 770 U
53469-21-9	Aroclor 1242	770	< 770 U
12672-29-6	Aroclor 1248	770	< 770 U
11097-69-1	**Aroclor 1254**	**770**	**2,200**
11096-82-5	**Aroclor 1260**	**770**	**3,100**
11104-28-2	Aroclor 1221	770	< 770 U
11141-16-5	Aroclor 1232	770	< 770 U
37324-23-5	Aroclor 1262	770	< 770 U
11100-14-4	Aroclor 1268	770	< 770 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	119%
Tetrachlorometaxylene	83.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S44-2.0-111414
SAMPLE

Lab Sample ID: ZK42M
LIMS ID: 14-24840
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 03:00
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	**Aroclor 1260**	**30**	**56**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.0%
Tetrachlorometaxylene	77.5%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S42-0.0-111414
SAMPLE

Lab Sample ID: ZK42N
LIMS ID: 14-24841
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 03:20
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 18.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	650	< 650 Y
11097-69-1	**Aroclor 1254**	**160**	**10,000 ES**
11096-82-5	**Aroclor 1260**	**160**	**7,100 ES**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	83.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S42-0.0-111414
DILUTION

Lab Sample ID: ZK42N
LIMS ID: 14-24841
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 10:14
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 50.0
Silica Gel: No

Percent Moisture: 18.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	1,600	< 1,600 U
53469-21-9	Aroclor 1242	1,600	< 1,600 U
12672-29-6	Aroclor 1248	1,600	< 1,600 U
11097-69-1	**Aroclor 1254**	**1,600**	**11,000**
11096-82-5	**Aroclor 1260**	**1,600**	**9,300**
11104-28-2	Aroclor 1221	1,600	< 1,600 U
11141-16-5	Aroclor 1232	1,600	< 1,600 U
37324-23-5	Aroclor 1262	1,600	< 1,600 U
11100-14-4	Aroclor 1268	1,600	< 1,600 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	D
Tetrachlorometaxylene	D

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S18-1.5-111414
SAMPLE

Lab Sample ID: ZK420
LIMS ID: 14-24842
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 03:39
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 10.0%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**1,500 E**
11096-82-5	**Aroclor 1260**	**150**	**2,000 E**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	NR
Tetrachlorometaxylene	109%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S18-1.5-111414
DILUTION

Lab Sample ID: ZK420
LIMS ID: 14-24842
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 10:33
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 10.0%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	740	< 740 U
53469-21-9	Aroclor 1242	740	< 740 U
12672-29-6	Aroclor 1248	740	< 740 U
11097-69-1	**Aroclor 1254**	**740**	**1,500**
11096-82-5	**Aroclor 1260**	**740**	**2,100**
11104-28-2	Aroclor 1221	740	< 740 U
11141-16-5	Aroclor 1232	740	< 740 U
37324-23-5	Aroclor 1262	740	< 740 U
11100-14-4	Aroclor 1268	740	< 740 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	NR
Tetrachlorometaxylene	83.1%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S14-1.5-111414
SAMPLE

Lab Sample ID: ZK42P
LIMS ID: 14-24843
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 03:58
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 16.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	Aroclor 1254	640	< 640 Y
11096-82-5	**Aroclor 1260**	**160**	**2,100 E**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	103%
Tetrachlorometaxylene	84.9%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S14-1.5-111414
DILUTION

Lab Sample ID: ZK42P
LIMS ID: 14-24843
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 10:53
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 25.0
Silica Gel: No

Percent Moisture: 16.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	800	< 800 U
53469-21-9	Aroclor 1242	800	< 800 U
12672-29-6	Aroclor 1248	800	< 800 U
11097-69-1	Aroclor 1254	800	< 800 U
11096-82-5	**Aroclor 1260**	**800**	**2,100**
11104-28-2	Aroclor 1221	800	< 800 U
11141-16-5	Aroclor 1232	800	< 800 U
37324-23-5	Aroclor 1262	800	< 800 U
11100-14-4	Aroclor 1268	800	< 800 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	108%
Tetrachlorometaxylene	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S09-1.5-111414
SAMPLE

Lab Sample ID: ZK42Q
LIMS ID: 14-24844
Matrix: Soil
Data Release Authorized: NW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 04:18
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**370 E**
11096-82-5	**Aroclor 1260**	**31**	**600 E**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	79.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S09-1.5-111414
DILUTION

Lab Sample ID: ZK42Q
LIMS ID: 14-24844
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/17/14 11:12
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	160	< 160 U
53469-21-9	Aroclor 1242	160	< 160 U
12672-29-6	Aroclor 1248	160	< 160 U
11097-69-1	**Aroclor 1254**	**160**	**370**
11096-82-5	**Aroclor 1260**	**160**	**600**
11104-28-2	Aroclor 1221	160	< 160 U
11141-16-5	Aroclor 1232	160	< 160 U
37324-23-5	Aroclor 1262	160	< 160 U
11100-14-4	Aroclor 1268	160	< 160 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.9%
Tetrachlorometaxylene	76.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S45-1.0-111414
SAMPLE

Lab Sample ID: ZK42R
LIMS ID: 14-24845
Matrix: Soil
Data Release Authorized: MW
Reported: 11/19/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 04:37
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	**Aroclor 1260**	**30**	**42**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.8%
Tetrachlorometaxylene	76.2%

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ZK42:00036-Rev

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S28-2.0-111414
SAMPLE

Lab Sample ID: ZK42S
LIMS ID: 14-24846
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/16/14 04:56
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.9 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	**Aroclor 1260**	**31**	**52**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.0%
Tetrachlorometaxylene	74.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-111414	87.2%	59-115	82.8%	58-112	0
LCS-111414	93.5%	59-115	93.0%	58-112	0
LCSD-111414	82.0%	59-115	81.8%	58-112	0
3-818-V94-S02-1.0-111414	75.8%	47-120	74.0%	53-116	0
3-818-V94-S02-1.0-111414 MS	77.0%	47-120	76.0%	53-116	0
3-818-V94-S02-1.0-111414 MSD	78.2%	47-120	75.5%	53-116	0
3-818-V94-S37-1.0-111414	78.8%	47-120	79.2%	53-116	0
3-818-V94-S37-1.0-111414 DL	97.5%	47-120	87.9%	53-116	0
3-818-V94-S10-1.0-111414	85.8%	47-120	74.5%	53-116	0
3-818-V94-S38-1.0-111414	70.8%	47-120	73.8%	53-116	0
3-818-V94-S35-1.0-111414	78.0%	47-120	73.8%	53-116	0
3-818-V94-S39-1.0-111414	71.2%	47-120	72.2%	53-116	0
3-818-V94-S25-1.0-111414	75.2%	47-120	79.0%	53-116	0
3-818-V94-S25-1.0-111414 DL	116%	47-120	83.0%	53-116	0
3-818-V94-S40-1.0-111414	77.5%	47-120	77.0%	53-116	0
3-818-V94-S36-1.0-111414	78.2%	47-120	80.0%	53-116	0
3-818-V94-S36-1.0-111414 DL	84.4%	47-120	76.9%	53-116	0
3-818-V94-S41-1.0-111414	88.1%	47-120	76.6%	53-116	0
3-818-V94-S41-1.0-111414 DL	106%	47-120	79.4%	53-116	0
3-818-V94-S26-1.0-111414	99.6%	47-120	82.8%	53-116	0
3-818-V94-S26-1.0-111414 DL	D	47-120	D	53-116	0
3-818-V94-S43-1.0-111414	101%	47-120	84.0%	53-116	0
3-818-V94-S43-1.0-111414 DL	119%	47-120	83.1%	53-116	0
3-818-V94-S44-2.0-111414	80.0%	47-120	77.5%	53-116	0
3-818-V94-S42-0.0-111414	114%	47-120	83.8%	53-116	0
3-818-V94-S42-0.0-111414 DL	D	47-120	D	53-116	0
3-818-V94-S18-1.5-111414	NR	47-120	109%	53-116	0
3-818-V94-S18-1.5-111414 DL	NR	47-120	83.1%	53-116	0
3-818-V94-S14-1.5-111414	103%	47-120	84.9%	53-116	0
3-818-V94-S14-1.5-111414 DL	108%	47-120	85.0%	53-116	0
3-818-V94-S09-1.5-111414	75.8%	47-120	79.8%	53-116	0
3-818-V94-S09-1.5-111414 DL	86.9%	47-120	76.4%	53-116	0
3-818-V94-S45-1.0-111414	76.8%	47-120	76.2%	53-116	0
3-818-V94-S28-2.0-111414	77.0%	47-120	74.0%	53-116	0

Microwave (MARS) Control Limits PCBSMI
Prep Method: SW3546
Log Number Range: 14-24828 to 14-24846

ZK42 00038_Rev A 11/19/14

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A

Sample ID: 3-818-V94-S02-1.0-111414
MS/MSD

Lab Sample ID: ZK42A
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted MS/MSD: 11/14/14

Date Analyzed MS: 11/15/14 22:09
MSD: 11/15/14 22:28
Instrument/Analyst MS: ECD5/JGR
MSD: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 13.4 g-dry-wt
MSD: 13.4 g-dry-wt
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 10.8%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 30 U	117	149	78.5%	118	149	79.2%	0.9%
Aroclor 1260	< 30 U	121	149	81.2%	126	149	84.6%	4.0%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S02-1.0-111414
MATRIX SPIKE

Lab Sample ID: ZK42A
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 22:09
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 10.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	---
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	Aroclor 1260	30	---
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.0%
Tetrachlorometaxylene	76.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S02-1.0-111414
MATRIX SPIKE DUP

Lab Sample ID: ZK42A
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/14/14
Date Received: 11/14/14

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 22:28
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.8%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	---
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	Aroclor 1260	30	---
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.2%
Tetrachlorometaxylene	75.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-111414
LCS/LCSD

Lab Sample ID: LCS-111414
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized: MW
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 11/14/14

Date Analyzed LCS: 11/15/14 21:11
LCSD: 11/15/14 21:30
Instrument/Analyst LCS: ECD5/JGR
LCSD: ECD5/JGR

GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount LCS: 12.0 g-dry-wt
LCSD: 12.0 g-dry-wt
Final Extract Volume LCS: 4.00 mL
LCSD: 4.00 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	155	167	92.8%	136	167	81.4%	13.1%
Aroclor 1260	158	167	94.6%	138	167	82.6%	13.5%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	93.5%	82.0%
Tetrachlorometaxylene	93.0%	81.8%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-111414
METHOD BLANK

Lab Sample ID: MB-111414
LIMS ID: 14-24828
Matrix: Soil
Data Release Authorized:
Reported: 11/17/14

QC Report No: ZK42-The Boeing Company
Project: NBF 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted: 11/14/14
Date Analyzed: 11/15/14 20:51
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	87.2%
Tetrachlorometaxylene	82.8%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 21, 2014

Colette Gaona
Landau Associates, Inc.
130 – 2nd Avenue
Edmonds, WA 98020

RE: Project: NBF 3-818 V94 Substation Removal
ARI Job: ZL09

Dear Colette:

Please find enclosed original Chain of Custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eighteen samples in good condition on November 19, 2014.

The samples were analyzed for PCBs, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211

Enclosure

cc: Carl Bach, The Boeing Company, P.O. Box 3707, M/S 1W-12, Seattle, WA 98124-2207

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

LANDAU ASSOCIATES

☒ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (503) 542-1080
☐ _____

ZLC9

Date 11/19/14
Page 1 of 1

Chain-of-Custody Record

Project Name 3-818 V94 Substation Removal Project No. 002582.214.005
Project Location/Event NBF 3-818 V94 Substation
Sampler's Name Rosemary Trimmer/Ken Brown
Project Contact Colette Gaona
Send Results To Karl Bach, Colette Gaona, Anne Halvorsen RCBS

Turnaround Time
☐ Standard
☒ Accelerated
☐ 24-hr TAT

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters
3-818-V94-S25-3.0-111914	11/19/14	0920	Soil	1	X
3-818-V94-S57-3.0-111914		0925		1	X
3-818-V94-S41-3.0-111914		0930		1	X
3-818-V94-S47-1.0-111914		0935		1	X
3-818-V94-S46-1.0-111914		0940		1	X
3-818-V94-S48-1.0-111914		0945		1	X
3-818-V94-S43-3.0-111914		0950		1	X
3-818-V94-S49-3.0-111914		0955		1	X
3-818-V94-S18-3.0-111914		1000		1	X
3-818-V94-S50-3.0-111914		1005		1	X
3-818-V94-S54-3.0-111914		1010		1	X
3-818-V94-S53-3.0-111914		1015		1	X
3-818-V94-S51-3.0-111914		1020		1	X
3-818-V94-S14-3.0-111914		1025		1	X
3-818-V94-S09-3.0-111914		1030		1	X
3-818-V94-S55-3.0-111914		1035		1	X
3-818-V94-S52-3.0-111914		1040		1	X
3-818-V94-S56-3.0-111914		1045		1	X

Observations/Comments
- X Allow water samples to settle, collect aliquot from clear portion RWT
- ~~X NWTPH-Dx - run acid wash/silica gel cleanup~~
- ___ run samples standardized to _____ product
- ___ Analyze for EPH if no specific product identified
- VOC/BTEX/VPH (soil):
  - ___ non-preserved
  - ___ preserved w/methanol
  - ___ preserved w/sodium bisulfate
  - ___ Freeze upon receipt
- ___ Dissolved metal water samples field filtered
- Other _____

Special Shipment/Handling or Storage Requirements On ice

Method of Shipment deliver to lab

Relinquished by	Received by	Relinquished by	Received by
Signature Rosemary Trimmer	Signature A. Volgardsen	Signature	Signature
Printed Name Rosemary Trimmer	Printed Name ARI	Printed Name	Printed Name
Company Landau Associates	Company	Company	Company
Date 11/19/14 Time 1135	Date 11/19/14 Time 1135	Date ____ Time ____	Date ____ Time ____

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 8/09

ZLC9 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Boeing
Project Name: 3-818 V94 Substation
COC No(s): _____ (NA)
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No. ZL09
Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 3.1
Time. 1135
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 90877985

Cooler Accepted by: AV Date: 11/19/14 Time: 1135

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: Box		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

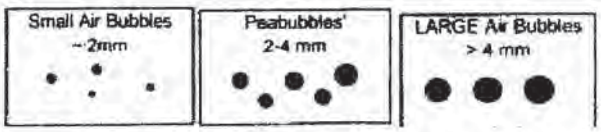
Samples Logged by: AV Date: 11/19/14 Time: 1157

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZL09
Client: The Boeing Company
Project Event: 0025082.214.005
Project Name: 3-818 V94 Substation Removal

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	3-818-V94-S25-3.0-111914ZL09A		14-25063	Soil	11/19/14 09:20	11/19/14 11:35
2.	3-818-V94-S57-3.0-111914ZL09B		14-25064	Soil	11/19/14 09:25	11/19/14 11:35
3.	3-818-V94-S41-3.0-111914ZL09C		14-25065	Soil	11/19/14 09:30	11/19/14 11:35
4.	3-818-V94-S47-1.0-111914ZL09D		14-25066	Soil	11/19/14 09:35	11/19/14 11:35
5.	3-818-V94-S46-1.0-111914ZL09E		14-25067	Soil	11/19/14 09:40	11/19/14 11:35
6.	3-818-V94-S48-1.0-111914ZL09F		14-25068	Soil	11/19/14 09:45	11/19/14 11:35
7.	3-818-V94-S43-3.0-111914ZL09G		14-25069	Soil	11/19/14 09:50	11/19/14 11:35
8.	3-818-V94-S49-3.0-111914ZL09H		14-25070	Soil	11/19/14 09:55	11/19/14 11:35
9.	3-818-V94-S18-3.0-111914ZL09I		14-25071	Soil	11/19/14 10:00	11/19/14 11:35
10.	3-818-V94-S50-3.0-111914ZL09J		14-25072	Soil	11/19/14 10:05	11/19/14 11:35
11.	3-818-V94-S54-3.0-111914ZL09K		14-25073	Soil	11/19/14 10:10	11/19/14 11:35
12.	3-818-V94-S53-3.0-111914ZL09L		14-25074	Soil	11/19/14 10:15	11/19/14 11:35
13.	3-818-V94-S51-3.0-111914ZL09M		14-25075	Soil	11/19/14 10:20	11/19/14 11:35
14.	3-818-V94-S14-3.0-111914ZL09N		14-25076	Soil	11/19/14 10:25	11/19/14 11:35
15.	3-818-V94-S09-3.0-111914ZL09O		14-25077	Soil	11/19/14 10:30	11/19/14 11:35
16.	3-818-V94-S55-3.0-111914ZL09P		14-25078	Soil	11/19/14 10:35	11/19/14 11:35
17.	3-818-V94-S52-3.0-111914ZL09Q		14-25079	Soil	11/19/14 10:40	11/19/14 11:35
18.	3-818-V94-S56-3.0-111914ZL09R		14-25080	Soil	11/19/14 10:45	11/19/14 11:35

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S25-3.0-111914
SAMPLE

Lab Sample ID: ZL09A
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 14:26
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	Aroclor 1260	31	< 31 U
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	81.8%
Tetrachlorometaxylene	79.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S25-3.0-111914
MATRIX SPIKE

Lab Sample ID: ZL09A
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 14:48
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	---
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	Aroclor 1260	31	---
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.0%
Tetrachlorometaxylene	80.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S25-3.0-111914
MATRIX SPIKE DUP

Lab Sample ID: ZL09A
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 15:10
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	31	---
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	Aroclor 1254	31	< 31 U
11096-82-5	Aroclor 1260	31	---
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U
37324-23-5	Aroclor 1262	31	< 31 U
11100-14-4	Aroclor 1268	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	81.2%
Tetrachlorometaxylene	80.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S57-3.0-111914
SAMPLE

Lab Sample ID: ZL09B
LIMS ID: 14-25064
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 15:32
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 15.4%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	**Aroclor 1254**	**29**	**40**
11096-82-5	**Aroclor 1260**	**29**	**72**
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	76.8%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S41-3.0-111914
SAMPLE

Lab Sample ID: ZL09C
LIMS ID: 14-25065
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 15:54
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 24.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	**Aroclor 1254**	**33**	**130**
11096-82-5	**Aroclor 1260**	**33**	**250**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.5%
Tetrachlorometaxylene	82.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S47-1.0-111914
SAMPLE

Lab Sample ID: ZL09D
LIMS ID: 14-25066
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 20:17
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 22.0%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	48	< 48 Y
11096-82-5	**Aroclor 1260**	**32**	**200**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U
37324-23-5	Aroclor 1262	32	< 32 U
11100-14-4	**Aroclor 1268**	**32**	**36**

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.8%
Tetrachlorometaxylene	86.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S46-1.0-111914
SAMPLE

Lab Sample ID: ZL09E
LIMS ID: 14-25067
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 20:38
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.0%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	28	< 28 U
53469-21-9	Aroclor 1242	28	< 28 U
12672-29-6	Aroclor 1248	28	< 28 U
11097-69-1	**Aroclor 1254**	**28**	**170**
11096-82-5	**Aroclor 1260**	**28**	**240**
11104-28-2	Aroclor 1221	28	< 28 U
11141-16-5	Aroclor 1232	28	< 28 U
37324-23-5	Aroclor 1262	28	< 28 U
11100-14-4	Aroclor 1268	28	< 28 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.5%
Tetrachlorometaxylene	79.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S48-1.0-111914
SAMPLE

Lab Sample ID: ZL09F
LIMS ID: 14-25068
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 21:00
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 16.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	Aroclor 1260	30	< 30 U
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	75.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S43-3.0-111914
SAMPLE

Lab Sample ID: ZL09G
LIMS ID: 14-25069
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 21:22
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 11.9 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 26.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	34	< 34 U
53469-21-9	Aroclor 1242	34	< 34 U
12672-29-6	Aroclor 1248	34	< 34 U
11097-69-1	**Aroclor 1254**	**34**	**84**
11096-82-5	**Aroclor 1260**	**34**	**76**
11104-28-2	Aroclor 1221	34	< 34 U
11141-16-5	Aroclor 1232	34	< 34 U
37324-23-5	Aroclor 1262	34	< 34 U
11100-14-4	Aroclor 1268	34	< 34 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.2%
Tetrachlorometaxylene	77.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S49-3.0-111914
SAMPLE

Lab Sample ID: ZL09H
LIMS ID: 14-25070
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 21:44
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	180	< 180 Y
11096-82-5	**Aroclor 1260**	**29**	**420 E**
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	77.0%
Tetrachlorometaxylene	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S49-3.0-111914
DILUTION

Lab Sample ID: ZL09H
LIMS ID: 14-25070
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 06:11
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 14.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	Aroclor 1254	290	< 290 Y
11096-82-5	**Aroclor 1260**	**150**	**430**
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	86.1%
Tetrachlorometaxylene	87.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S18-3.0-111914
SAMPLE

Lab Sample ID: ZL09I
LIMS ID: 14-25071
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 22:06
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	29	< 29 U
11096-82-5	Aroclor 1260	29	< 29 U
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	77.5%
Tetrachlorometaxylene	76.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S50-3.0-111914
SAMPLE

Lab Sample ID: ZL09J
LIMS ID: 14-25072
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 22:28
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.2%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	**Aroclor 1254**	**29**	**74**
11096-82-5	**Aroclor 1260**	**29**	**85**
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	77.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S54-3.0-111914
SAMPLE

Lab Sample ID: ZL09K
LIMS ID: 14-25073
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 22:50
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 16.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	**Aroclor 1254**	**30**	**340 E**
11096-82-5	Aroclor 1260	60	< 60 Y
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.2%
Tetrachlorometaxylene	76.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S54-3.0-111914
DILUTION

Lab Sample ID: ZL09K
LIMS ID: 14-25073
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 06:33
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 5.00
Silica Gel: No

Percent Moisture: 16.5%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	150	< 150 U
53469-21-9	Aroclor 1242	150	< 150 U
12672-29-6	Aroclor 1248	150	< 150 U
11097-69-1	**Aroclor 1254**	**150**	**410**
11096-82-5	Aroclor 1260	150	< 150 U
11104-28-2	Aroclor 1221	150	< 150 U
11141-16-5	Aroclor 1232	150	< 150 U
37324-23-5	Aroclor 1262	150	< 150 U
11100-14-4	Aroclor 1268	150	< 150 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.5%
Tetrachlorometaxylene	85.9%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S53-3.0-111914
SAMPLE

Lab Sample ID: ZL09L
LIMS ID: 14-25074
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 23:11
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 15.7%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	**Aroclor 1254**	**30**	**180**
11096-82-5	**Aroclor 1260**	**30**	**93**
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U
37324-23-5	Aroclor 1262	30	< 30 U
11100-14-4	Aroclor 1268	30	< 30 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	73.0%
Tetrachlorometaxylene	76.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S51-3.0-111914
SAMPLE

Lab Sample ID: ZL09M
LIMS ID: 14-25075
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 00:17
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.6%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	28	< 28 U
53469-21-9	Aroclor 1242	28	< 28 U
12672-29-6	Aroclor 1248	28	< 28 U
11097-69-1	**Aroclor 1254**	**28**	**57**
11096-82-5	**Aroclor 1260**	**28**	**28**
11104-28-2	Aroclor 1221	28	< 28 U
11141-16-5	Aroclor 1232	28	< 28 U
37324-23-5	Aroclor 1262	28	< 28 U
11100-14-4	Aroclor 1268	28	< 28 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	83.2%
Tetrachlorometaxylene	81.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S14-3.0-111914
SAMPLE

Lab Sample ID: ZL09N
LIMS ID: 14-25076
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 05:49
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.1%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	28	< 28 U
53469-21-9	Aroclor 1242	28	< 28 U
12672-29-6	Aroclor 1248	28	< 28 U
11097-69-1	Aroclor 1254	28	< 28 U
11096-82-5	Aroclor 1260	28	< 28 U
11104-28-2	Aroclor 1221	28	< 28 U
11141-16-5	Aroclor 1232	28	< 28 U
37324-23-5	Aroclor 1262	28	< 28 U
11100-14-4	Aroclor 1268	28	< 28 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	81.0%
Tetrachlorometaxylene	80.8%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S09-3.0-111914
SAMPLE

Lab Sample ID: ZL09O
LIMS ID: 14-25077
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 01:01
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.1 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.0%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	28	< 28 U
53469-21-9	Aroclor 1242	28	< 28 U
12672-29-6	Aroclor 1248	28	< 28 U
11097-69-1	Aroclor 1254	28	< 28 U
11096-82-5	Aroclor 1260	28	< 28 U
11104-28-2	Aroclor 1221	28	< 28 U
11141-16-5	Aroclor 1232	28	< 28 U
37324-23-5	Aroclor 1262	28	< 28 U
11100-14-4	Aroclor 1268	28	< 28 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	81.5%
Tetrachlorometaxylene	78.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: 3-818-V94-S55-3.0-111914
SAMPLE

Lab Sample ID: ZL09P
LIMS ID: 14-25078
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 01:22
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.9%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	29	< 29 U
53469-21-9	Aroclor 1242	29	< 29 U
12672-29-6	Aroclor 1248	29	< 29 U
11097-69-1	Aroclor 1254	29	< 29 U
11096-82-5	Aroclor 1260	29	< 29 U
11104-28-2	Aroclor 1221	29	< 29 U
11141-16-5	Aroclor 1232	29	< 29 U
37324-23-5	Aroclor 1262	29	< 29 U
11100-14-4	Aroclor 1268	29	< 29 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	78.2%
Tetrachlorometaxylene	73.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S52-3.0-111914
SAMPLE

Lab Sample ID: ZL09Q
LIMS ID: 14-25079
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 01:44
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 8.2%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	27	< 27 U
53469-21-9	Aroclor 1242	27	< 27 U
12672-29-6	Aroclor 1248	27	< 27 U
11097-69-1	**Aroclor 1254**	**27**	**77**
11096-82-5	**Aroclor 1260**	**27**	**170**
11104-28-2	Aroclor 1221	27	< 27 U
11141-16-5	Aroclor 1232	27	< 27 U
37324-23-5	Aroclor 1262	27	< 27 U
11100-14-4	Aroclor 1268	27	< 27 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.8%
Tetrachlorometaxylene	77.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: 3-818-V94-S56-3.0-111914
SAMPLE

Lab Sample ID: ZL09R
LIMS ID: 14-25080
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted: 11/19/14
Date Analyzed: 11/21/14 02:06
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 14.5 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.3%

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	28	< 28 U
53469-21-9	Aroclor 1242	28	< 28 U
12672-29-6	Aroclor 1248	28	< 28 U
11097-69-1	**Aroclor 1254**	**28**	**110**
11096-82-5	**Aroclor 1260**	**28**	**77**
11104-28-2	Aroclor 1221	28	< 28 U
11141-16-5	Aroclor 1232	28	< 28 U
37324-23-5	Aroclor 1262	28	< 28 U
11100-14-4	Aroclor 1268	28	< 28 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.5%
Tetrachlorometaxylene	72.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-111914
METHOD BLANK

Lab Sample ID: MB-111914
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted: 11/19/14
Date Analyzed: 11/20/14 13:21
Instrument/Analyst: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U
37324-23-5	Aroclor 1262	33	< 33 U
11100-14-4	Aroclor 1268	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.2%
Tetrachlorometaxylene	88.5%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-111914	95.2%	59-115	88.5%	58-112	0
LCSD-111914	83.5%	59-115	78.2%	58-112	0
3-818-V94-S25-3.0-111914	81.8%	47-120	79.2%	53-116	0
3-818-V94-S25-3.0-111914 MS	82.0%	47-120	80.0%	53-116	0
3-818-V94-S25-3.0-111914 MSD	81.2%	47-120	80.8%	53-116	0
3-818-V94-S57-3.0-111914	79.0%	47-120	76.8%	53-116	0
3-818-V94-S41-3.0-111914	86.5%	47-120	82.5%	53-116	0
3-818-V94-S47-1.0-111914	86.8%	47-120	86.8%	53-116	0
3-818-V94-S46-1.0-111914	75.5%	47-120	79.8%	53-116	0
3-818-V94-S48-1.0-111914	75.8%	47-120	75.8%	53-116	0
3-818-V94-S43-3.0-111914	79.2%	47-120	77.0%	53-116	0
3-818-V94-S49-3.0-111914	77.0%	47-120	75.0%	53-116	0
3-818-V94-S49-3.0-111914 DL	86.1%	47-120	87.8%	53-116	0
3-818-V94-S18-3.0-111914	77.5%	47-120	76.5%	53-116	0
3-818-V94-S50-3.0-111914	79.0%	47-120	77.8%	53-116	0
3-818-V94-S54-3.0-111914	82.2%	47-120	76.5%	53-116	0
3-818-V94-S54-3.0-111914 DL	89.5%	47-120	85.9%	53-116	0
3-818-V94-S53-3.0-111914	73.0%	47-120	76.5%	53-116	0
3-818-V94-S51-3.0-111914	83.2%	47-120	81.8%	53-116	0
3-818-V94-S14-3.0-111914	81.0%	47-120	80.8%	53-116	0
3-818-V94-S09-3.0-111914	81.5%	47-120	78.2%	53-116	0
3-818-V94-S55-3.0-111914	78.2%	47-120	73.2%	53-116	0
3-818-V94-S52-3.0-111914	80.8%	47-120	77.8%	53-116	0
3-818-V94-S56-3.0-111914	76.5%	47-120	72.0%	53-116	0

Microwave (MARS) Control Limits PCBSMI
Prep Method: SW3546
Log Number Range: 14-25063 to 14-25080

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-111914
LCS/LCSD

Lab Sample ID: LCS-111914
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized:
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 11/19/14

Date Analyzed LCS: 11/20/14 13:42
LCSD: 11/20/14 14:04
Instrument/Analyst LCS: ECD7/PK
LCSD: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount LCS: 12.0 g-dry-wt
LCSD: 12.0 g-dry-wt
Final Extract Volume LCS: 4.00 mL
LCSD: 4.00 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	138	167	82.6%	130	167	77.8%	6.0%
Aroclor 1260	147	167	88.0%	140	167	83.8%	4.9%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	87.2%	83.5%
Tetrachlorometaxylene	82.2%	78.2%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: 3-818-V94-S25-3.0-111914
MS/MSD

Lab Sample ID: ZL09A
LIMS ID: 14-25063
Matrix: Soil
Data Release Authorized: MW
Reported: 11/21/14

QC Report No: ZL09-The Boeing Company
Project: 3-818 V94 Substation Removal
0025082.214.005
Date Sampled: 11/19/14
Date Received: 11/19/14

Date Extracted MS/MSD: 11/19/14

Date Analyzed MS: 11/20/14 14:48
MSD: 11/20/14 15:10
Instrument/Analyst MS: ECD7/PK
MSD: ECD7/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 12.8 g-dry-wt
MSD: 12.8 g-dry-wt
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 20.1%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 31 U	122	156	78.2%	125	156	80.1%	2.4%
Aroclor 1260	< 31 U	150	156	96.2%	154	156	98.7%	2.6%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.